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CONSUMERS UNION reports-

OCTOBER
1936

DENTIFRICES

MEN'S SHIRTS

ELECTRIC SHAVERS

ANTI-FREEZE

COAL AND OIL

BRANDIES, GINS, RUMS, CORDIALS

CANNED PEAS AND APRICOTS

CONSUMERS UNION OF UNITED STATES
22 E. 17th St. New York

(*DENTIFRICES—See page 3*)

CONSUMERS UNION *reports*

VOLUME I NUMBER 6 ©CIB 318688 OCTOBER, 1936

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The directors of Consumers Union do not feel, however, that they have done their job when they have provided information which permits the saving of a few pennies, or even a few dollars, by buying one brand instead of another. "Decent living standards for ultimate consumers" will never be maintained simply by reports on the quality and the price of products. All the technical information in the world will not give enough food or enough clothes to the textile worker's family living on $11 a week. They, like the college professor or the skilled mechanic, are ultimate consumers; but the only way in which any organization can aid them materially as consumers is by helping them, in their struggle as workers, to get an honest wage.

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A Report on Tooth Pastes and Powders

Dental authorities, disagreeing with the manufacturers of pastes and powders, find little value in dentifrices. None will prevent decay, but this report tells which are safe and inexpensive.

From the Dignity of Squibb Advertisers to the cartoons of Kolynos, the claims made for toothpastes and tooth powders are uniformly false. Not only will no toothpaste or powder bring romance into blighted lives, but none can sweeten the breath, destroy harmful bacteria, remove the "seven stains," prevent "pink toothbrush," prevent decay, or even whiten the teeth.

Just what can a toothpaste or powder do? Dental authorities are not agreed on the answer. Some believe that we could quite safely dispense with dentifrices altogether, using only a moistened brush to clean our teeth. One such authority, answering the question, "Are toothpastes and powders of any value?" replied, "Yes, they make the toothbrush taste better." And this viewpoint, extreme though it may seem to a public long misled by high-pressure advertising, may not be far from the truth. A larger group of dental authorities, including the American Dental Association, however, believes that a toothpaste or powder may serve as a *slight, mechanical aid* to the toothbrush in removing food particles from the teeth. But according to dental authorities, no toothpaste safe for daily use on the teeth can do more than this.

It is not true that "a clean tooth never decays." Some people who are most conscientious in brushing their teeth develop many cavities, while others who never use a toothbrush have perfect teeth. This does not mean that tooth brushing is not necessary for most persons. Brushing of the teeth probably does have some value in preventing decay, but it is likely that other factors are more important. Among these factors are diet, including the mother's diet before the child's birth, and heredity.

With civilized man's present food habits, frequent brushing of the teeth is probably a necessary practice, but it is the *brush* and not the paste or the powder one puts on it which is of chief importance. Some dentists believe that correct [1] brushing or massaging of the gums is more important than brushing the teeth; but, as the American Dental Association says, "a toothpaste or tooth powder is neither necessary nor desirable for massaging the gums."

It is evident that toothpastes and powders cannot be rated on their ability to whiten the teeth or to prevent decay. On the basis of the view of dental authorities that dentifrices are of value only in making brushing more pleasant and in aiding slightly in the mechanical cleansing of the teeth, all that can be demanded of a dentifrice is that it be free of harmful ingredients, and that it be inexpensive. The ratings of pastes and powders are therefore based mainly on these considerations.

Abrasives

To be safe, a toothpaste or powder should not be so abrasive as to scratch or wear away the protective enamel of the teeth. At one time many dentifrices contained powdered pumice, a very hard mineral substance which, if used daily, rapidly wears away the teeth. Few dentifrices now contain pumice, but all contain a large percentage of some insoluble powder, such as chalk. The physical properties of this powdered chalk or other material have an important bearing on whether the toothpaste or powder containing it will wear away the protective tooth-enamel over a period of years.

In general, the finer, the softer, and the less pointed or angular in shape are the particles of the powder, the less abrasive it will be. Unfortunately, it is difficult in practice to estimate relative abrasiveness by measurements of particle size, shape, and hardness, and satisfactory methods of direct measurement of abrasiveness have not yet been developed. (The Council on Dental Therapeutics of the American Dental Association is now studying this problem.)

To detect any outstandingly harsh abrasives in the dentifrices, experiments were made with a special abrasion test machine. Small plates of Monel metal (an alloy softer than tooth enamel) were rotated while pressed against a stationary toothbrush under uniform conditions. Various toothpastes and powders were applied to the toothbrush (which was changed after each run) and the plates were washed, dried, and examined under a microscope for evidence of scratching. No appreciable scratching was found. The test results indicate the probable absence of the more harmful abrasives, but they do not permit comparative ratings on abrasiveness, or provide assurance that a given dentifrice will not over a period of years produce harmful abrasion of the tooth enamel. No reliance can be placed in any tests of abrasiveness reported by dentifrice manufacturers. It is probably safest to avoid any dentifrice claimed to have new or special abrasives, such as *Pepsodent*.

With "do as your dentist does—use powder!" as their battle-cry, a number of dentifrice manufacturers have

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been trying to convince the American public that toothpaste is all wrong; that powder is the only satisfactory dentifrice. Although tooth powder has long been used and was the most popular type of dentifrice some years ago, it is now heralded almost as a great new discovery. Actually, dentists do not, and could not conveniently, use a powder when cleaning teeth with a rotating brush; they buy a powder, but make it into a paste before use. For everyday use, one is as good as the other. As the American Dental Association says, "there is no essential difference in the cleansing properties of a tooth powder over a tooth paste."

Tooth powders do, however, have one important advantage from the consumer's standpoint—they are cheaper than paste.

The Alkaline Side

The market is now flooded with a host of "milk of magnesia," "antacid," and "acid-neutralizing" dentifrices, as a result of the advertising-writers' adoption, exaggeration, and distortion of a current dental theory that acids produced by bacteria are one of the causes of tooth decay. Actually, the human mouth is normally slightly acid, and there is no evidence that this general acidity produces decay. It would not be desirable to alter this normal condition even if it were possible. Furthermore, no substance introduced into the mouth can make it alkaline for more than a few minutes at a time.

At one time many dentifrices contained strong acids, which temporarily produced beautifully white teeth, but caused irreparable damage to the tooth enamel. Fortunately, the recent vogue for milk of magnesia and antacid dentifrices and the widespread scare advertising about "insidious mouth acids" have largely done away with this danger. Of thirty toothpastes tested by Consumers Union, all but two or three were "on the alkaline side." Special tooth bleaches containing harmful acids are still sold, however.

A common claim made for dentifrices is that they will "whiten the teeth." As a matter of fact, even perfectly clean, normal, healthy teeth are not always white. Some teeth are naturally cream-colored or light yellow or faint bluish grey. Dental cements and artificial teeth must be supplied in from twenty to thirty different shades in order to match the various colors which normal, clean teeth have. People having teeth not naturally white cannot make them white by any amount of brushing, or by treatment with any safe substance or preparation. Experiments have shown that *Kolynos*, for example, widely advertised as making teeth "3 shades whiter in three days," actually cannot produce any perceptible change in the shade or color of teeth.

Despite claims of antiseptic action for dentifrices, the fact is that no toothpaste or tooth powder—or mouthwash—can effectively disinfect the mouth. Any substance capable of disinfecting the mouth tissues would injure them, and even if it were possible to destroy all germs in the mouth, the effect could last but a few minutes at best.

There is some evidence that starch, allowed to remain and ferment in the spaces between the teeth, may be a factor in promoting dental decay. Although most foods contain some starch, it is inadvisable to encourage the deposit of starch between teeth by using starchy dentifrices. For this reason the tooth powders and pastes reported on were tested for starch, and those containing it listed as *Not Acceptable*.

Sugar is objectionable in a dentifrice for the same reason. It has been replaced in most cases by saccharine, a powerful chemical sweetening-agent. The use of saccharine in foods is illegal, but in the small amounts used in toothpastes and powders it is probably not harmful.

Perborate

"There can't be too much of a good thing." This inversion of a familiar saying has apparently been adopted by dentifrice manufacturers who are selling an increasing number of products containing sodium perborate. Sodium perborate is a chemical compound useful under expert direction in a mouth disease called "Vincent's infection." It is neither necessary nor useful in dentifrices, and it can be harmful, especially if the mouth is not thoroughly rinsed after each use, and if the dentifrice containing it is used over a long period of time. "The increasing number of injurious burns of the oral mucosae [mucous membrane of the mouth] from the indiscriminate use of sodium perborate" has led the American Dental Association's Council on Dental Therapeutics to have "serious misgivings concerning unbridled drug exploitation." Not only may the use of perborate cause local inflammation, but there is also a pos-

Courtesy Vanguard Press

$2.75 Worth of Toothpaste = 7c. Worth of Chalk.

sibility of general poisoning from prolonged use. According to *Accepted Dental Remedies*, authoritative publication of the American Dental Association, "the free use of boric acid solutions or solutions of borates should be guarded against, particularly in children's mouths, because of the possible danger of 'borism' [boron poisoning] that may arise through reflex [involuntary] swallowing." Users of *Calox*, *Vince*, and *Squibb's Oral Perborate*, take note! Until recently, sodium perborate was not used in tooth *pastes*, probably because it is decomposed by certain ingredients contained by them. But a recent discovery is now claimed to make its use in toothpaste possible, and we can expect an epidemic of perborate toothpastes before long.

While the manufacture of dentifrices has probably less scientific basis than that of almost any other common commodity, the advertisers of toothpaste and tooth powder very commonly try to win the public to their product on the grounds that it is "scientific" and "approved by dentists." Many dentifrices have the word "Doctor" or "D.D.S." (Doctor of Dental Surgery) as part of the name. No reputable dentist or physician would permit his name to be used in this way, and the American Dental Association will not accept any product so named. Many manufacturers also use the word "laboratories" in the company name. Investigation would usually reveal that such "laboratories" exist only in someone's imagination.

Good Housekeeping

It is worthy of note that six of the *Not Acceptable* dentifrices were "tested and approved by the Bureau of Foods, Sanitation and Health conducted by Good Housekeeping Magazine." Almost every Consumers Union test adds to the evidence of the worthlessness of this Hearst magazine's advice.

Consumers should completely disregard, with one exception, all claims that a dentifrice is made by a "scientific formula," that it is approved by "leading dental authorities," that it is "made by a dentist," or any other words expressing or implying dental, medical, or scientific approval. The exception is the seal of acceptance of the Council on Dental Therapeutics of the American Dental Association, and even acceptance by that organization does not at present provide adequate assurance that the claims made for a dentifrice are accurate. Although the American Dental Association withdrew its seal of approval from *Squibb's* toothpaste because of the false claims made in Squibb advertising, *Iodent*, with its misleading name and misleading advertising, still retains the seal of approval.

"Cut Prices"

It is well known that "fifty-cent tubes" of toothpaste generally sell for thirty-nine cents or less, and "twenty-five-cent tubes" for twenty-one cents or less. So widespread is the practice that few consumers are fooled by it any more. The practice of marking products with fictitious high prices is inherently a deceptive one, and objectionable because it leads some to believe they are getting a bargain. Prices given in the listings are those actually paid. Toothpaste prices are apt to be lower at "heavy traffic locations."

Toothache waxes and drops commonly contain a corrosive poison such as phenol (carbolic acid). At least one death from carbolic poisoning resulting from the use of such a product has been reported. Dr. Bissel Palmer, in his book, *Paying Through the Teeth*, says of these products: "The caustic action of most of these toothache drops is so strong that not infrequently the user subsequently goes to a dentist with the membranes of the cheeks, lips, tongue, and floor and roof of the mouth burned and destroyed, but with the original toothache still pounding away excruciatingly."

Tooth Powders

Best Buys

Precipitated chalk, purchased in pound tins or cartons at the drugstore, 25c to 35c a lb. Use as an ordinary tooth powder. Flavoring by thoroughly mixing in a few drops of oil-of-peppermint or oil-of-wintergreen may make the powder more pleasant to use. Cost per oz., about 2c.

Salt or baking soda or a mixture of both, while having no special value as a dentifrice or antiseptic, is inexpensive and harmless, and is probably about as valuable as any other dentifrice. Don't use salt crystals on the brush; they can readily injure the gums. Dissolve a quarter-teaspoon of salt or baking soda, or both, in a glass of warm water, and dip the brush into the solution. After brushing, the remaining solution may be used as a mouthwash to remove loosened food particles. This will do all for the mouth that any mouthwash can do.

The following formula, recommended by the American Dental Association, can be prepared by any pharmacist. A pound, costing about 80c, should last about a year. Get prices before having the formula made up. Cost, 5c or less per oz.

Calcium carbonate, precipitated	95 parts	(by weight)
Castile soap	3 parts	" "
Saccharine	⅛ part	" "
Oil-of-birch	1 part	" "
Oil-of-peppermint	½ part	" "

A saving can be made, and the resulting product will be just as good, if Hard Soap, U. S. P., is substituted for Castile soap in this formula, and synthetic methyl salicylate for oil-of-birch.

Some people are known to be sensitive to oil-of-birch or saccharine. As these are common ingredients of many dentifrices, persons susceptible to them should avoid using dentifrices in which they occur.

***Ward's* Tooth Powder** (By mail order from Montgomery Ward & Co., Chicago). 17c plus postage for refillable 3½-oz. can; 21c plus postage for refill powder, 7 oz. in cardboard container. By far the most economical of any commercial toothpaste or powder listed. Free from harmful ingredients. Accepted by American Dental Association. Cost, exclusive of postage, per oz. in can of powder, 5c; per oz. of refill powder, 3c.

***CD* Tooth Powder** (Cooperative Distributors, Inc., 30 Irving Place, NYC). 23c plus postage for 4-oz. can. Cost, exclusive of postage, 5.1c per oz.

Pebeco Tooth Powder (Lehn and Fink, distributor). 21c for 4 1/3-oz. can. "Differs from *Pebeco* Tooth Paste in that it contains no potassium chlorate." (See *Pebeco* and *New Pebeco*, under Toothpastes.) The manufacturers' omission of this poisonous compound from their tooth powder is probably due not only to growing consumer protest against its use in *Pebeco* toothpaste but to the explosive properties of potassium chlorate in dry, powdered form. Cost per oz., 4.9c.

Also Acceptable

(In order of cost)

Colgate Dental Powder (Colgate-Palmolive-Peet Co., Jersey City, N. J.). 29c for 4½-oz. can. Cost per oz., 6.2c.

Dentray Tooth Powder (Dentray Co., NYC). 29c for 4½-oz. can. A new product featuring a tray-shaped cap into which the powder is to be poured and the toothbrush dipped. This gadget is a greater contribution to the advertising man's sales talk than to economy or sanitation. Antacid and deodorant claims for this product are not acceptable. Cost per oz., 7c.

Listerine Tooth Powder (Lambert Pharmacal Co., St. Louis). 18c for 2½-oz. can. Cost per oz., 7.1c.

Not Acceptable

Pepsodent Tooth Powder (The Pepsodent Co., Chicago). 39c for 4-oz. can. Excessively acid; might injure enamel. Cost, per oz., 7.1c.

Sodium perborate, or any preparation claiming to contain it, or claiming to release oxygen bubbles in the mouth.

Vince (Vince Laboratories, NYC). 27c for 2-oz. can. Sodium perborate, colored and flavored, sold at a great mark-up in price. Claims and directions for use objectionable. Approved by Good Housekeeping. Cost per oz., 13.5c.

Calox Tooth Powder (McKesson & Robbins, Inc.). 34c for 4-oz. can. Contained sodium perborate. Expensive. Cost per oz., 8.3c.

Zincora Tooth Powder (Park Laboratories, NYC, distributors). 39c for 4-oz. can. Comments under *Calox* apply. "Tested and Approved by Good Housekeeping." Cost per oz., 10.5c.

Forhan's Tooth Powder (Forhan Co., Inc.). 34c for 2¾-oz. can. One of the most expensive tooth powders reported on. Cost per oz., 12.6c.

Dr. Lyon's Tooth Powder (Sterling Products, Inc.). 29c for 4½-oz. can. Contained sugar. Cost per oz., 6.7c.

The following tooth powders were not examined by Consumers Union; the comments on them are based upon information obtained from the American Dental Association and other sources:

Astring-O-Sol Tooth Powder (Frederick Stearns & Co.). Contained sodium perborate.

Foresite Dental Preparation (Foresite Mfg. Co., Minneapolis). No one with "foresite" would use this preparation if he knew that it was found to contain 28% of pumice, extremely destructive to tooth enamel. Of no value for pyorrhea as claimed.

Lavita Dental Powder (Lavita Co., Waterloo, Iowa). $2.50 for 3-oz. can. Contained 84% pumice. A very harmful and grossly overpriced preparation for which false and exceedingly objectionable claims have been made.

Lymeogene. Contained an abrasive hard enough to scratch glass, and hence very destructive to tooth enamel.

Ora-Noid. Contained a gritty substance resembling ordinary sand. Expensive.

Tooth Pastes

Best Buys

Milk-I-Dent Dental Cream (Woolworth's). 10c per tube. Cost per oz., dry weight, 6.2c.

Wrigley's Spearmint Toothpaste (F. & W. Grand stores). 10c a tube. Antacid and deodorant claims not acceptable. Cost per oz., dry weight, 8c.

Ward's Milk of Magnesia Dental Cream (Montgomery Ward & Co.). "Giant" tube, 26c plus postage. Accepted by American Dental Association. Cost, exclusive of postage, per oz., dry weight, 8.4c.

Milk of Magnesia Toothpaste (Mfd. by J. R. Brundage, Inc., NYC; distributed by F. & W. Grand stores). 10c per tube. Cost per oz., dry weight, 9.4c.

Also Acceptable

CD Toothpaste (Cooperative Distributors, Inc., 30 Irving Place, NYC). 22c per tube, plus postage. Cost, exclusive of postage, per oz., dry weight, 10.6c.

Ward's Mint-Flavored Toothpaste (Montgomery Ward & Co.). 19c per tube, plus postage. Not "beneficial as a gum massage." Cost, exclusive of postage, per oz., dry weight, 10.9c.

Denta-Mint Tooth Paste (Montgomery Ward & Co.). 19c per tube. Cost, exclusive of postage, per oz., dry weight, 11.0c.

Peptomint (Sears, Roebuck & Co.). 29c per tube, plus postage. Claim that it "assists in the prevention of pyorrhea" is false. Inclusion of pepsin is of no value, and is based on a ridiculous theory of "film-removal" exploded many years ago. Cost, exclusive of postage, per oz., dry weight, 12.3c.

Listerine Toothpaste (Lambert Pharmacal Co., St. Louis). 21c per tube. Does not contain *Listerine* (which would be of no value if present). Economy claims are unjustified, as only a few widely sold toothpastes are more expensive if the amount in a tube is considered. Chalk and a small amount of soap are not undesirable in a dentifrice as *Listerine* advertising implies. Cost per oz., dry weight, 14.5c.

Iodent No. 1 and *Iodent No. 2* (Iodent Chemical Co., Detroit). 39c per tube, each. Despite acceptance of *Iodent* by the American Dental Association, *Iodent's* advertising is objectionable. Cost per oz., dry weight, *No. 1*, 15.2c; *No. 2*, 15.8c.

Not Acceptable

Pepsodent (The Pepsodent Co.). 29c per tube. Excessively acid. There is some indication that this toothpaste may have harmful solvent action on

Not Acceptable (*continued*)

the tooth enamel. Until the formula has been improved, or the safety of the present product proved beyond question, it must be considered as *Not Acceptable*. Cost per oz., dry weight, 10.3c.

Kolynos (American Home Products, Inc.). 39c per tube. Most expensive toothpaste of those tested (on dry weight basis). Cost per oz., dry weight, 29.2c. Will not whiten the teeth or free the mouth of germs.

Ipana (Bristol-Meyers Co., NYC). 39c per tube. Expensive. Will not prevent or cure "pink toothbrush." Any benefit to the gums from brushing will not be increased by the use of *Ipana* or any other toothpaste. Cost per oz., dry weight, 24c.

Forhan's (Forhan Co., Inc.). 36c per tube. Of no value in preventing or curing pyorrhea, nor otherwise beneficial to the gums. Expensive. Approved by Good Housekeeping. Cost per oz., dry weight, 15.7c.

Squibb Dental Cream (E. R. Squibb & Sons). 31c per tube. This "ethical" firm has drawn condemnation from the American Dental Association for the fallacious and misleading advertising of its toothpaste. Expensive. Test indicated presence of a small amount of phenolphthalein as coloring matter, a substance quite harmful to some people, possibly even in the amount used in this toothpaste. Cost per oz., dry weight, 16.7c.

The following toothpastes contained potassium chlorate, a poison:

New Pebeco (Lehn & Fink). 21c per tube. Contained reduced amount of potassium chlorate, but still enough to be harmful. Will not whiten teeth or deodorize the breath. Approved by Good Housekeeping. Cost per oz., dry weight, 13.5c.

Pebeco (Lehn and Fink, Inc., distributors). 39c per tube. Will not whiten teeth, "firm" gums, or effectively "combat mouth acids." Approved by Good Housekeeping. Cost per oz., dry weight, 16.8c.

The following toothpastes contained starch, which may promote decay:

Bost **Tooth Paste** (Wasey Products, Inc.). 29c per tube. Expensive. Approved by Good Housekeeping. Cost per oz., dry weight, 19.7c.

Craig-Martin **Milk of Magnesia Tooth Paste.** (Craig-Martin, Chicago). 20c per tube. Cost per oz., dry weight, 5.1c.

Colgate Ribbon Dental Cream (Colgate-Palmolive-Peet Co.). 27c per tube. Approved by Good Housekeeping. Cost per oz., dry weight 12.2c.

Phillips' **Magnesia Tooth Paste** (Sterling Products, Inc.). 21c per tube. Cost per oz., dry weight, 16.8c.

Sears Milk of Magnesia Dental Cream (Sears, Roebuck and Co.). 27c plus postage. Cost, exclusive of postage, per oz., dry weight, 6.7c.

Pep-R-Mint Milk of Magnesia Dental Cream (Redd Chemical Co., Newark, N. J.).

The following toothpastes were sold in lead tubes. Most manufacturers now use tin tubes because lead tubes make the contents turn black, and they break easily. And, much worse from the consumer's point of view, the lead tubes may involve danger of poisoning.

Royal Blue Milk of Magnesia Dental Cream (Royal Blue Laboratories, NYC).

Sheray Milk of Magnesia Dental Cream (Broadway Laboratories, NYC).

Vogue Dental Cream (Equitable Laboratories, NYC).

Dr. Sachs **Milk of Magnesia Toothpaste** (Dr. Sachs Laboratories, NYC).

D. D. S. **Tooth Paste** (Bond Laboratories, NYC). Claimed to contain sodium perborate, which is objectionable.

The following toothpastes were not examined by Consumers Union; the comments on them are based on information obtained from other sources:

Dr. Strasska's **Tooth Paste** (Johann Strasska Laboratories, Los Angeles). On examination by a chemist of the American Dental Association, this dentifrice was found to contain a harmful abrasive.

Dr. McArthur's Dental Massage (Professional Research Laboratories, Inc., Detroit). $1 a tube. Worthless. Claims fraudulent.

Dr. West's **Tooth Paste** (Western Bottle Manufacturing Co.). Contained starch.

Kramer's Original Charcoal Dental Cream (Modern Products, Inc., Jackson, Michigan). Charcoal content valueless and potentially harmful.

New Mix Dental Cream (Gilmer Products Co., NYC). Contained starch. Trick double-barreled tube based on ridiculous distortion of dental and chemical theories.

S. T. 37 **Tooth Paste** (Sharp & Dohme, Inc., Baltimore). Contained a small amount of hexylresorcinol (a much over-rated antiseptic) which is of no value in this use, but has caused cases of acute inflammation of the lips and mouth.

Worcester Salt **Tooth Paste** (Worcester Salt Co.). Contrary to popular belief, salt has no special value as a dentifrice, either alone or in mixtures. It is not an effective antiseptic or antacid, and will not harden the gums.

CLEANSERS FOR ARTIFICIAL TEETH

Best Buy

Any good toilet soap and a suitable brush.

Not Acceptable

Many special cleansers for artificial dentures contain harmful abrasives.

TOOTH BLEACHES

There are many harmful tooth bleaches and tartar and stain removers on the market.

No preparation can safely whiten teeth. Some preparations which are not safe will whiten teeth, but even one application can cause irreparable damage to the tooth enamel.

No preparation can safely remove tartar; it can be removed only by a dentist with the use of special instruments. Beware of preparations claiming to be especially effective in removing stains from the teeth.

Not Acceptable

Bleachodent, Ekay, Ex-Tartar, Tartaroff, Snovy-White, Taxi, Ransom & Randolph's Stain Remover, Ex-cel Tooth Stain Remover.

SHIRTS versus LAUNDRIES

THE LIFE OF A SHIRT ORDINARILY DEpends more on the laundering it goes through than on the wear it gets. Few shirts, no matter how strong their fabrics, can withstand the destructive action of commercial bleaches followed by the stresses and strains of commercial ironing. With such laundering, a poorly made shirt may wear as long as a better one.

These facts, confirming everyday experience, stand out from the results of actual wear tests on ten brands of broadcloth shirts, and nine brands of work shirts. The tests also showed that the label "pre-shrunk" or "sanforized" is not insurance against shrinkage.

This report is based on a wear test carried on by members of the CU staff, supplemented by ratings of fabrics and construction by a textile consultant. The shirts were rated on their ability to withstand wear and laundering, on thread count, fit and shrinkage, color-fastness, general appearance, and quality of workmanship in the garment.

The shirts were laundered by a commercial laundry after each day's wear. To eliminate personal factors in wear, all of the shirts were rotated among various staff members after each wearing.

Where Shirts Fail

In general the cheap shirts withstood as many launderings as the more expensive ones. In fact, a 79-cent shirt withstood 26 launderings, while a two-dollar shirt failed after 20 launderings. Almost all of the broadcloth shirts tested failed first at the fold of the collar. Such failure is apparently caused by the strain placed on the material when the fold is ironed rather than by the abrasion resulting from normal wear. If one is concerned with economy more than with appearance, the purchase of the lower-priced brands is advisable for those who send their shirts to ordinary commercial laundries. When shirts are carefully laundered at home, so that wear rather than laundering is chiefly responsible for failure, more expensive shirts, well constructed of good materials, are better buys.

If its destiny is a commercial laundry, a cheap shirt may wear as well as a more expensive one. A wise buyer will not trust "pre-shrunk" or "color-fast" labels.

All of the shirts tested except the work shirts were of broadcloth, since this fabric is by far the most commonly used shirting material. Other shirting materials are madras, poplin, oxford, and chambray. All of these fabrics vary greatly in quality, and none can be considered generally superior to the others.

Broadcloth is probably the best all-around shirting material. It is a fabric woven with approximately twice as many threads running lengthwise (warp threads) as crosswise (filling threads). In some cases, each thread may be made up of two strands twisted together; in other cases there is only one strand. Broadcloth may be woven 2 x 2, 2 x 1, or 1 x 1. The first figure refers to the number of strands in the warp threads; the second is the number in the filling threads. The best grades are woven 2 x 2, with a thread count of about 170 in the warp and 90 in the filling. Thread count means the number of threads per inch of material.

Poplin is woven similarly to broadcloth, generally with filling threads heavier than the warp threads. The best grades are woven 2 x 1, with a thread count of about 108 (warp) x 40 (filling).

Madras is woven with an approximately equal number of warp and filling threads.

Oxford consists of a variety of coarse weaves of mercerized cotton; true oxford has basket weave.

The thread count of the material is an important factor in determining the quality of shirts. A higher count means greater resistance to abrasion and also better appearance. It does not, however, necessarily indicate greater fabric strength.

In work shirts, abrasion is not as important as strength, so that thread count alone would not be a good indication of the quality of the shirt.

In general, high thread count indicates a good fabric, and the probability of satisfactory wearing quality with careful home laundering. Thread count is of little value as a guide to wear with the severe treatment frequently given by commercial laundries.

Sanforizing

The Sears Roebuck *Pilgrim* shirt, which was labeled as "Sanforized-shrunk," was sent to the laundry with a size 15 neck and returned with a 14½ neck.

The tag attached to the J. C. Penney *Towncraft* pre-shrunk shirt admonished the purchaser to "buy your correct size, as this shirt will fit now and after repeated launderings." This didn't keep the laundry, however, from transforming the size 15 *Towncraft* into a 14½.

Of the seven brands of sanforized shirts tested, four shrank excessively, and one slightly. Of the six brands of shirts pre-shrunk by other means, four shrank excessively and two slightly.

It is true that sanforizing does pre-shrink the fabric, and it is apparently possible to eliminate shrinkage almost entirely in the finished garment. Sanforizing is advertised, however, as a "controlled" shrinkage process and test data seem to indicate that manufacturers do not always see fit to complete the shrinkage process.

In general "no-wilt," or starchless, collars are constructed with an inner lining to give the collar stiffness. The

lining material is of two general types. In the first, the regular cotton filling thread is replaced every three or four threads by a cellulose acetate yarn. After these collars are made up they are treated with a liquid which dissolves the acetate yarn. Heating and pressing then evaporates the solvent and fuses the outside and the lining of the collar into one unit. The second type of fused liner consists of a cotton cloth impregnated with synthetic resin which becomes stiff when heated in the pressing operation after the collar is made.

In general the "no-wilt" collars did not resist laundering as well as the soft collars.

None of the colored shirts tested was able to withstand successfully the strong bleach used by the laundry. All faded to a marked degree.

Materials commonly used in work shirts include covert cloth, chambray, and khaki. The shirts tested in this group were of chambray and covert cloth. There are good and poor fabrics in both these types.

In the case of work shirts, particular attention should be paid to reinforcements. The best work shirts are reinforced across the shoulders and chest and also at the elbows.

Cost was found to be no indication of quality in work shirts, the highest priced giving the least service.

What to Look for

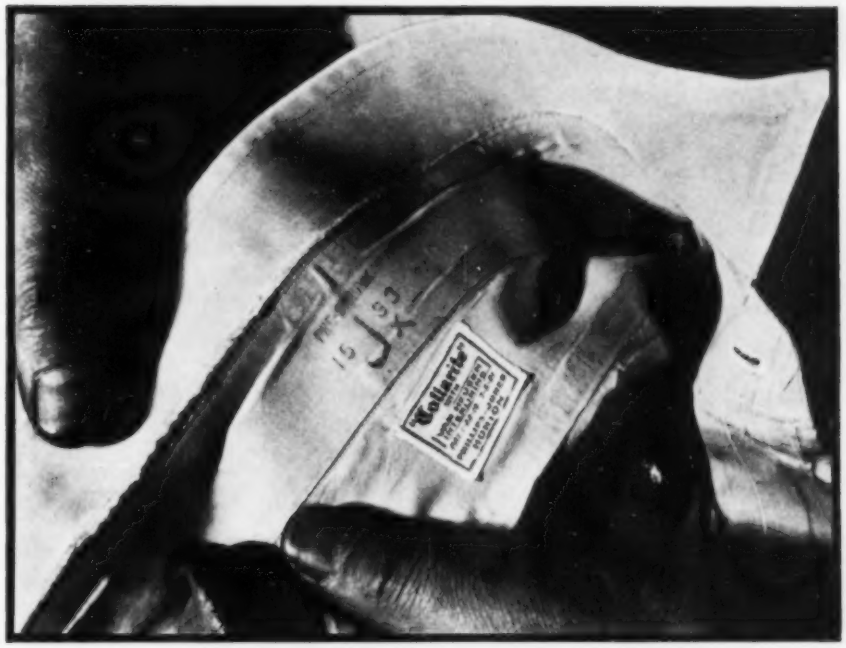
Points to examine in selecting a shirt are:

THE MATERIAL ITSELF: A finer weave indicates a higher thread count, better appearance, and probably a more durable fabric.

THE SEAMS: All seams should be well turned, with no ragged edges. They should be sewn double, with a fairly fine stitch—about 16 stitches to the inch.

BUTTONS AND BUTTONHOLES: Buttons on cheap shirts are scaly and lack lustre, and sometimes have two holes instead of four. On good shirts the buttons are made of ocean pearl and are clear and regular. There should be seven buttons on the front. Buttonholes should be carefully finished.

COLLAR: Examine the collar points to see that they are well matched and that there are no lumps in the tips.



THE FOLD OF THE COLLAR WEARS OUT FIRST.

Broadcloth Shirts

Best Buys

Montgomery Ward Cat. No. 35 B 2570, spring-summer 1936 catalog (Montgomery Ward, Baltimore). 94c plus postage. White and blue shirts tested. "Pre-shrunk" cotton broadcloth. Soft collar. Good appearance and fair serviceability. Insufficient shrinkage allowance in neck and sleeves. Montgomery Ward states that equivalent shirt in fall-winter catalog is No. 35 C 2613.

Montgomery Ward Cat. No. 35 B 2585, spring-summer 1936 catalog (Montgomery Ward). $1.39 plus postage. White and blue broadcloth shirts tested. "Sanforized." Soft collar. Very good appearance and serviceability. Insufficient shrinkage allowance in the neck. Montgomery Ward states that equivalent shirt in fall-winter catalog is No. 35 C 2745.

Also Acceptable

(*The order of listing has no significance.*)

Arrow-Hitt Mitoga (Cluett, Peabody & Co.). $2.00. White and blue broadcloth shirts tested. "Sanforized." Starchless collar. No appreciable shrinkage in laundering. Good appearance and fair service.

CD Shirt Cat. No. 510 BA 804 (Cooperative Distributors, Inc., 30 Irving Place, NYC). $2.05 plus postage. White, 2 x 2 broadcloth, full shrunk. Material had highest thread count and best construction and appearance of all the shirts tested. Gave good service. Had insufficient allowance for shrinkage in neck.

CD Shirt 510 BA 802 (Cooperative Distributors, Inc.). $1.35 plus postage. White and blue shirts tested. San Remo broadcloth, full shrunk. Starchless collar. Good serviceability and appearance. Insufficient shrinkage allowance in neck.

Pilgrim Cat. Nos. 33 L 100 and 102, spring-summer 1936 catalog (Sears, Roebuck & Co., Philadelphia). 79c plus postage. White and blue shirts tested. Believed to be same as 33 D 100 and 102, fall-winter catalog. "Sanforized." Soft collar. Shrank considerably. Appearance poor. This shirt is rated as acceptable largely because of its low price.

Also Acceptable (continued)

Towncraft (J. C. Penney stores). $1.49. Blue and white shirts tested. The blue shirt was "sanforized" and had a "Trubinized" collar. Quality of materials and serviceabiilty were definitely better for the white shirt, which was pre-shrunk and had a soft collar. Both had insufficient shrinkage allowance in the neck. Appearance good. Color-fastness of the blue shirt best of the colored broadcloth shirts.

Tru-Point Cat. Nos. 33 L 307 and 308, spring-summer 1936 catalog (Sears, Roebuck & Co.). $1.39. Believed to be same as No. 33 D 307 and 308, fall-winter catalog. White and blue shirts tested. Pre-shrunk. Starchless collar. Appearance and serviceability fair. Shrank slightly.

Van Heusen Collarite (Phillips-Jones Corp.). $1.17 to $1.65 depending on place of purchase. White and blue shirts tested. Starchless collar. Fair serviceability and appearance. Insufficient shrinkage allowance.

Not Acceptable

Radmore (F. & W. Grand stores) 79c. White and blue shirts tested. Starchless collar. Serviceability and appearance poor. Shrinkage much greater than in any other of the broadcloth shirts tested.

WORK SHIRTS

Best Buys

Hermitage (F. W. Woolworth Co.). 40c. Excessive shrinkage in sleeves. Neck shrank to correct size.

Pioneer Cat. No. 35 B 3112, spring-summer 1936 catalog (Montgomery Ward, Baltimore). 67c plus postage. Blue chambray. Believed to be same as No. 35 C 3118, fall-winter catalog. Best constructed shirt in group tested. Double front and back, with reinforced sleeves. Insufficient shrinkage allowance in neck and sleeves. Should be purchased a size larger.

Sears Hercules No. 33 L 631, spring-summer 1936 catalog (Sears, Roebuck & Co., Philadelphia). 84c plus postage. Blue chambray. Believed to be same as No. 33 D 631, fall-winter catalog. "Sanforized." No appreciable shrinkage in laundering.

Also Acceptable

Ox Hide (J. C. Penney stores). 59c. Blue chambray. Excessive shrinkage in neck and sleeves. Buy one size larger.

Big Yank (F. & W. Grand and other stores). 69c. Blue chambray. Excessive shrinkage in sleeves and neck. Buy at least one-half size larger.

Sturdy Oak No. 33 L 627, spring-summer 1936 catalog (Sears, Roebuck & Co.). 77c plus postage. Blue covert cloth. Believed to be same as No. 33 D 627, fall-winter catalog. "Sanforized." Slight shrinkage in laundering.

Not Acceptable

Pioneer Cat. No. 35 B 3095, spring-summer 1936 catalog (Montgomery Ward, Baltimore). 77c plus postage. Tan cotton covert cloth. Believed to be same as No. 35 C 3095, fall-winter catalog. "Sanforized." Shrank to undersize in neck and sleeves.

Thread Count of Broadcloth Shirts after Launderings

High Count

SHIRT	THREAD COUNT
CD Shirt 510BA804, white	152 x 76
Towncraft, white	160 x 84
Montgomery Ward 35B2585, white	144 x 88

Good Count

Arrow-Hitt Mitoga, blue, white	142 x 63
Van Heusen, blue, white	134 x 68
CD Shirt 510BA802 blue, white	132 x 68
Montgomery Ward 35B2570, blue, white	140 x 61
Towncraft, blue	138 x 60
Tru-Point, blue	138 x 58

Low Count

Radmore, white	117 x 64
Radmore, blue	102 x 62
Pilgrim, blue, white	102 x 62

Note: The material in all the shirts was of 1 x 1 construction except in the *Brewster*, which was of 2 x 2.

Sweet-Orr (Sweet-Orr & Co., Inc., NYC). 88c to 98c depending on place of purchase. Shirts of covert cloth and chambray tested. Extremely poor serviceability—one of the shirts went to pieces in second laundering.

Lee (H. D. Lee Mercantile Co., Kansas City, Mo.). 88c to 98c depending on place of purchase. Shirts of covert cloth and chambray tested. Excessive shrinkage in sleeves and neck. Very poor serviceability.

LABOR NOTES

Arrow—The manufacturers, Cluett, Peabody & Co., are non-union.

Big Yank—This brand is made by Reliance Manufacturing Co. According to the United Garment Workers' Union, the company is viciously anti-union and uses runaway shops (plants moved to smaller communities where the employer can escape paying the prevailing union rate).

CD **Shirt**—Union-made. The manufacturers have a closed-shop agreement with the Amalgamated Clothing Workers of America.

Lee—The manufacturers, H. D. Lee Mercantile Co., are under contract with the United Garment Workers' Union.

Sturdy Oak—The Somerset Co., manufacturing this brand, has a contract with the Shirtmakers' Union of the Amalgamated Clothing Workers of America.

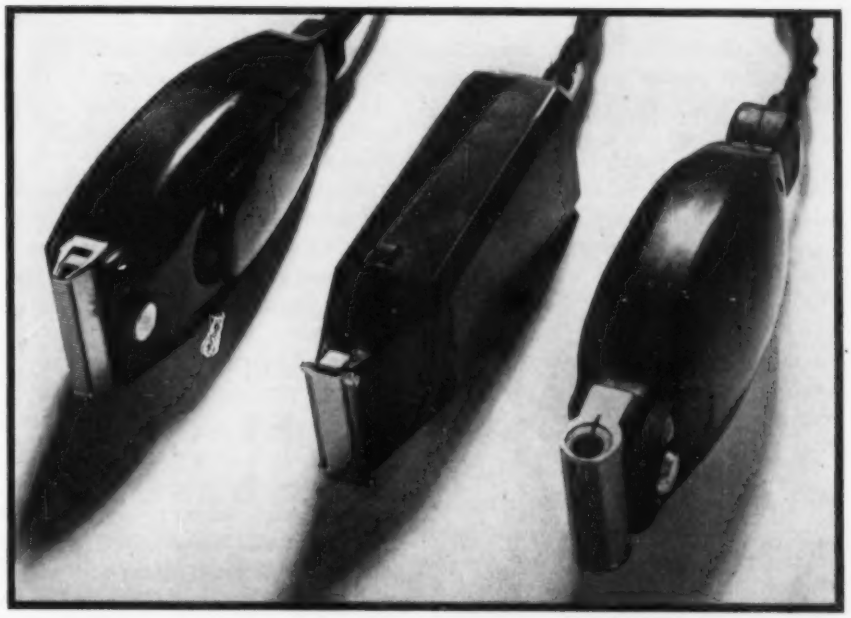
Sweet-Orr—Another union-made shirt. The contract is with the United Garment Workers' Union.

Van Heusen—Union-made. Phillips Jones Co. has an agreement with the United Garment Workers' Union.

The following brands come from mail-order houses and chain stores, which customarily buy a product from various sources and sell it under one brand name, so that there is no way of telling what percentage, if any, of the shirts sold under any of the brand names is union made: *Hercules* (Sears, Roebuck), *Hermitage* (F. W. Woolworth), *Ox Hide* (J. C. Penney), *Pilgrim* (Sears, Roebuck), *Pioneer* (Montgomery Ward), *Radmore* (F. & W. Grand), *Towncraft* (J. C. Penney), *Tru-Point* (Sears, Roebuck).

Three Electric Shavers

One Works



Schick Clipshave Packard

"My Face Feels as if I Had Shaved with a dull lawn mower." This is one man's description of the after-effects of using a *Packard* electric shaver.

Imaginative as this person's impression is, it gives a fair idea of just how satisfactory one of the leading electric shavers may be. Even a careful, conservative technician, one of the several making comparative studies of electric shavers, was forced to depart from good technical language in his report on the *Clipshave*, when he came to the description of after-effects —"terrible," he wrote.

While the ratings given by the various technicians reporting differed in minor respects, they were unanimous in finding the *Schick* the only one giving a satisfactory shave. Both *Packard Lektro-Shaver* and *Clipshave* were rated as decidedly not acceptable. These reports are supported by information gathered from persons who have purchased and used (or tried to use) the various electric shavers.

Until other and better products of this type are marketed, the problem of whether or not one should buy an electric shaver can be considered entirely in terms of the *Schick*.

"Will it give as close a shave as an ordinary safety razor?" "Is it more or less irritating than the ordinary razor?" "Is it worth the high price of $15?" These are some of the questions frequently asked.

With only one exception, all who tested the *Schick* reported that it did not give as close a shave as an ordinary razor with a sharp blade. Some felt that the shave was not sufficiently close to permit satisfactory use. Most believed, however, that while the shave was not as close as might be desired, it was sufficiently close for ordinary requirements.

Skin Irritation

No one found the *Schick* more irritating than an ordinary razor, and some found it decidedly less irritating. One person, a physician who had been using a *Schick* shaver for about a year, stated that he had previously suffered from skin irritation caused by shaving cream. He has suffered no irritation with the use of the *Schick*.

Reports on the time required for shaving with the *Schick* vary greatly. A few reported that after using the shaver long enough to become accustomed to it they could shave in no more time than is required with an ordinary razor (including the time required for lathering). The consensus of opinion was, however, that more time is required with the *Schick*. The time reported by different persons varied all the way from five minutes to fifteen minutes.

Whether the *Schick* is worth $15 to the user is a question which the individual must decide for himself. From the point of view of economy it is probably not worth while. Razor blades are no longer the expensive item they once were. Satisfactory safety razor blades (by present standards, at least) can be purchased for a penny apiece and are good for at least two or three shaves.[1] Shaving cream, unless one uses the comparatively expensive non-lathering type, is also a small item. The first cost of a *Schick* could pay for enough blades and shaving soap to last for from six to ten years. One should not expect a longer life than this from an electric shaver.

[1] Tests on razor blades will be reported in an early issue.

In the Next Issue

1937 RADIOS
VACUUM CLEANERS
CHILDREN'S SHOES
WINES
And Other Reports and Articles

Note: The report on men's socks, announced for October, will be included instead in the November issue.

The cost of the electricity used by electric shavers is trifling, amounting to about a penny per hundred shaves with electricity at five cents per kilowatt hour.

On the other hand, for one who dislikes the messiness of lathering, or who finds shaving soap or the ordinary razor irritating, or whose skin is readily nicked and cut by a safety razor, the *Schick* may be well worth its high price. It may also offer an advantage to those who do not have hot water available for shaving, since the electric shaver requires no lathering or wetting or other preparation.

For others the choice is doubtful even assuming that one can afford to spend $15. Of those who participated in the tests only one or two showed enough enthusiasm for the *Schick* to indicate that they would continue to use it.

Not Good for Travelers

One who travels a great deal, shaving frequently on trains or in hotels where there may be no convenient electric outlets, or where the current may not be of the proper voltage, would probably not be justified in buying an electric shaver.

One who is considering the purchase of an electric shaver should first be sure that there is a convenient electric outlet available close to a shaving mirror. The purchaser will find that it is necessary to develop a new shaving technique, which ordinarily cannot be done in one or two shaves. A week or two or even more may be required to learn to use the shaver to the best advantage. It is even more necessary than in ordinary shaving to stretch the skin taut and to move the shaver "against the grain."

The advertising for electric shavers offers as clear an example as one could ask of how little reliance can be placed in advertising claims. Any razor-harassed male reading the advertisements for electric shavers at once pictures a new mechanical Utopia where the morning shaving ritual becomes a few gentle passes of a purring instrument over the face, leaving not the faintest trace of any hair.

The *Schick* advertising presents the *Schick* as a perfect shaver, implying, even if not stating, that the *Schick* shaves more closely than an ordinary razor, and claiming even that the *Schick*, by causing nature to discard the "blade calloused skin," "makes a middle-aged or older man look years younger."

Says the Progress Corporation of its *Packard Lifetime Lektro-Shaver:* "It lops off every hair close to the skin and so gently you scarcely realize you're shaving . . . There is absolutely no tugging, no rawness, no burning." "Lektro-Shaver brings the evolution of shaving to its end. Human ingenuity cannot possibly devise a more pleasant and more efficient method." Compare these statements with technicians' reports of "Poor shave, irritating."

Or compare the *Clipshave* claim that "with it you can shave the heaviest beard smoothly and closely without the slightest irritation" with the technician's report previously noted: "Results—very poor. After-effects—terrible."

Electric Shavers

Best Buy

Schick Dry Shaver Model S (Schick Dry Shaver, Inc., Stamford, Conn.). $15. 110 volts, alternating or direct current. 9 watts. 5½-foot cord. Superior to previous *Schick* model. Good bearings. Construction and workmanship good. Only one of the three makes tested which gives acceptable and comfortable shave. Inferior, however, to ordinary safety razor with sharp blade in closeness of shave.

Not Acceptable

Packard Lifetime Lektro-Shaver (Progress Corp., NYC). $15. 110 volts, alternating or direct current. No wattage given. 6-foot cord. Good bearings. Construction and workmanship good. Quality of shave poor. Irritating to skin.

Hanley Clipshave (Clipshave, Inc., Port Chester, N.Y.). $10. 110 volts, alternating or direct current. 8 watts. 5¼-foot cord. Bearings, construction, and workmanship exceedingly poor. In two cases, one of the two posts holding the shaving head to the body of the shaver broke off. Quality of shave poor. Irritating to skin.

We Test Electric Shavers

ANTI-FREEZE

All Kinds of Liquids and Solutions have been sold and used as anti-freeze preparations for automobile radiators. They range from salt solutions to honey, from wood alcohol to kerosene. All of them, marvelous to relate, work! That is, they all work if they are expected only to keep the radiator from freezing.

The modern automobile is, however, a delicate mechanism and demands many other characteristics of the radiator fluid than low freezing point alone. Some of these desirable characteristics are non-corrosiveness to metals so that the radiators will not rust, low viscosity so that the fluid will flow through the cooling system readily, and absence of effect on rubber and automobile finishes. Low evaporation at operating temperature is also desirable.

Salt solutions are corrosive to metals; glycerine softens rubber; honey and other sugar solutions are so thick that they pump very slowly, which may result in local overheating and charring of the sugar.

Wood alcohol (also known as methyl alcohol or methanol) is unsatisfactory as an anti-freeze, since it boils off at a comparatively low temperature, and is injurious to the automobile finish. But what is far more important, it is extremely poisonous, and should never be used as an anti-freeze, for its vapors can cause blindness and even death.

Kerosene and fuel oil heat up too readily. They are not only likely to cause local overheating in warm weather, but they also present a fire hazard. Moreover, they may soften rubber.

One should use only a radiator fluid of known composition. The best substance for winters in the temperate zone is ethylene glycol. Its first cost is high, but it does not evaporate during use. It can be drawn off at the end of the winter, the rust and dirt allowed to settle, and re-used the following winter.

Denatured ethyl alcohol is good, and its first cost is only about one-fourth that of ethylene glycol. It evaporates while in use, however, particularly during periods of mild weather. The cost for the entire winter may be considerable if frequent replenishment is found necessary. Furthermore, because alcohol evaporates, the motorist can never be sure that enough is left to give protection, and thus runs a risk of freezing his motor, with resultant need of costly repairs. Even if freezing does not occur, the continual worry that it may happen is a disadvantage that should be considered in making a choice. Alcohol should not be used in cars which overheat readily. Other factors which may make alcohol undesirable are that it may harm the automobile finish if spilled, and that some of the denaturants used with grain alcohol may be toxic.

All radiator liquids should contain rust-retarding substances. They are present in practically all commercial anti-freeze preparations.

The radiator should be checked for leaks before any anti-freeze is used. If any leaks cannot be eliminated, expensive anti-freeze liquids should be avoided.

Before the anti-freeze is added, thorough cleaning of the radiator is advisable. To do this, drain it completely. Fill with a solution, mixed previously in a can or pail, of a pound of washing soda, or a half-pound trisodium phosphate, and two gallons of hot water. About a quart of kerosene may well be added. Run the engine for fifteen minutes. Drain completely. Refill with fresh water, run the engine for five minutes and drain again. Repeat three times to insure that all dirt and cleaning solution have been removed.

Tighten all hose connections, replacing any worn ones. Tighten water pump and cylinder head nuts. These precautions are especially necessary if ethylene glycol or glycerine is used, because of their higher cost per gallon.

Best Buys

Ethylene glycol.

Eveready Prestone (National Carbon Company, NYC). $2.95 a gal. Ethylene glycol with added rust inhibitor.

Denatured ethyl alcohol.

Anti-freeze solutions which are mainly ethyl alcohol, such as the following, are best buys for those whose radiators cannot be made leak-proof:

Super Thermo 188 (Mfd. by Publicker Commercial Alcohol Co., Philadelphia; distrib. by Sears, Roebuck & Co. Bought at retail store; not listed in mail order catalog). 69c a gal. Also available in auto service stations at 20c a qt.

Ward's Supreme Quality Completely Denatured Alcohol (Montgomery Ward & Co.). 69c a gal. at retail stores.

Also Acceptable

Ward's Non Evaporating Anti-Freeze (Montgomery Ward & Co.). $2.19 a gal. plus postage. About 80% ethylene glycol.

Sears Super Service Anti-Freeze (Sears, Roebuck & Co.). $2.39 a gal. plus postage. About 80% ethylene glycol.

Super Pyro Anti-Freeze (U. S. Industrial Alcohol Co.). $1 a gal.

Yukon Anti-Freeze (Baltimore Paint and Color Works). Denatured 95% ethyl alcohol plus rust inhibitor.

Not Acceptable

Wood alcohol (methanol or methyl alcohol) **and anti-freeze solutions which are mainly wood alcohol.**

Zerone (E. I. Du Pont de Nemours & Co., Wilmington, Del.). 77% wood alcohol. 74c a gal.

Glycerine and anti-freeze solutions which are mainly glycerine, such as:

Mobo Concentrate Anti-Freeze (John T. Stanley Co., Inc., NYC). Glycerine.

Puritan Anti-Freeze (Puritan Soap Co., Rochester, N. Y.). Glycerine.

General Motors Permanent Anti-Freeze (General Motors Parts Corp., Detroit). Glycerine with 25% water.

How to Buy and Use COAL AND OIL

For maximum economy, use the smaller sizes of coal or the heavier grades of oil. For adequate draft with small coal, repairs or new equipment may be needed.

COAL AND FUEL OIL DEALERS NATURALLY tend to push their highest priced and most profitable fuels.

Skepticism is the mother of economy. The fuel buyer can make substantial savings if he resolves to find out for himself whether cheap fuels will give satisfactory heat—instead of letting the dealer decide.

Although material losses result from the use of the wrong fuel, even greater losses are caused by unsuitable heating equipment, poor condition of the equipment, or improper operation.

Anthracite Coal

Use of the smaller sizes of anthracite is usually economical even if new equipment is required. Special grates or blowers are almost always necessary, and even a new magazine-feed boiler or a mechanical stoker may be worthwhile (for further information about these, see CONSUMERS UNION *Reports* for August, 1936).

If you do not wish to spend money for special equipment to burn buckwheat, you can probably save from 20 to 25 per cent by taking these steps:

First: Spend a few hours cleaning your boiler or furnace to prepare it for efficient operation.

Second: Check carefully the chimney and smokepipe to make sure there are no leaks which impair the draft.

Third: Burn pea coal either alone or mixed with larger sizes. It is a better buy than egg, stove, or nut coal.

The first two steps are important with any coal, but they are especially important for successful use of pea coal. Many heating plants in poor condition operate well enough with expensive sizes of anthracite, but they need minor reconditioning for equal results with cheaper coal.

To use pea coal without difficulty, order about one ton of stove coal and three tons of pea coal, storing them in separate bins. Use stove coal to start the fire and, if necessary, to raise heat quickly on cold mornings. But use pea coal whenever the fire needs additional fuel, and for banking at night and on mild days. To bank properly, spread a thin layer of coal over the fire, then leave the air ports in the firebox door open for only a few minutes before setting the dampers.

Soft Coal

Users of bituminous coal should select the cheapest size in the same way suggested for anthracite.

Stokers and special boilers are especially desirable for soft coal, for it is difficult to achieve smokeless combustion and high efficiency when the shovel is used.

The following pointers, will however, help guide the man with a shovel:

First: Use the upside-down method of building a fire. Cover the grate with coal; place paper and a generous supply of kindling on top; then light the paper. The blazing kindling will heat the coal and drive out a smoky, dense gas. This, however, will burn almost completely. Finally, the coal on the grate will become hot enough to burn, and the fire will work down to it. Less kindling will be needed if a shovelful of coal is sprinkled over the wood embers after the first blaze dies.

Second: When adding coal, first push the live coal back in the firebox, then fill the cavity with fresh fuel. Glowing coal must be left exposed in the back of the firebox to light the thick, burnable gases driven from the fresh coal by the heat. To provide oxygen to burn these gases, leave the air port in the firing door open. Close it, however, after the gases have been driven from the fresh coal and it starts to burn freely. This means frequent attention, but there is no shortcut to proper results.

Third: If the coal has a tendency to cake and form a hard crust over the fire, use a poker or a slicer to cut the crust so that gases can escape.

Coke

In some cities coke is a good buy because it costs less per ton than the corresponding sizes of coal and contains about as much heat per ton.

It has these advantages over coal: Being a manufactured product, its burning characteristics seldom vary; and the ash content is usually low. Furthermore, a unique advantage of coke is that when heated it releases no burnable gases. This simplifies one's task of obtaining complete and smokeless combustion. On the other hand coke is difficult to ignite, and starting a fire with coke is, therefore, more difficult than with coal.

There is another disadvantage which renders it unsuitable for many undersize boilers and furnaces: coke is light due to its porosity; therefore it fills much more space than an equal weight of coal. Very small boilers and furnaces may not hold enough coke to last overnight, even if they give satisfactory operation with coal.

A coke fire responds to draft opening quickly, but it is also hard to check if there is much air leakage into the ashpit when the drafts are closed. This may be overcome somewhat by using smaller-sized coke, or by mixing small sizes with the large sizes.

Chimneys

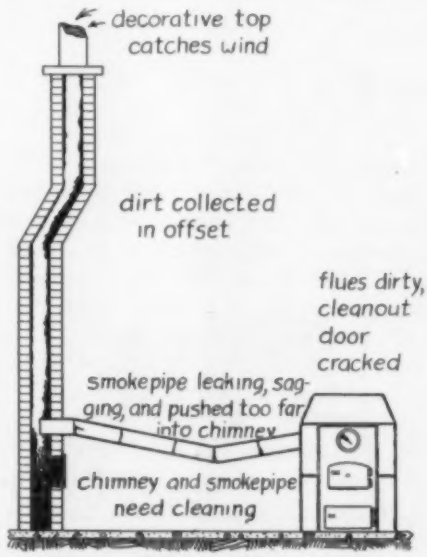
As has been pointed out, the smallest domestic sizes of solid fuels are the best buys, but they cannot be used in heating plants having poor draft. An anthracite coal user, for example, is doomed to burn the expensive egg, nut, or stove sizes if his chimney has many ailments.

Good draft is necessary, also, for efficient combustion. To burn efficiently, coal must be heaped on the grates in a deep layer; after stoking, the top of the coal should be about level with the bottom of the firing door. But with poor draft such a deep fire does not burn rapidly enough to supply sufficient heat, and it is necessary to maintain a shallow fire which burns out quickly and requires frequent attention.

If your chimney does not provide enough draft to burn the fuel you want to use, you can probably improve it by doing the following things (which homeowners generally don't bother to do):

1. Take down the smokepipe. If it is in good condition, clean it out and reinstall it. If it has holes or cracks, replace it.
2. Examine the inside of your chimney by looking through the cleanout door at its base or through the opening used for the smokepipe. In the daytime you can generally get a good idea as to whether or not the chimney needs cleaning by holding a mirror in the opening in such a way that you can see light from the sky. If this fails, use a flashlight. Have a dirty chimney cleaned, or clean it yourself by lowering into it a cobblestone wrapped with several burlap bags.
3. Build a fire in the boiler and when it is burning well put on some green vegetation or other material that will smoke heavily. Then cover the top of the chimney with a wet sack or something else which will make it reasonably tight. Look for holes and cracks where the smoke comes out both in the boiler room and in the chimney. If the chimney leaks, find a good mechanic to point it up or apply a new lining. If the smoke comes out of the furnace, use furnace cement on the holes. If any projections interfere with the tight closing of doors or dampers, file them off.

Poor draft may be due to one of these faults: more than one smokepipe connected to a chimney flue; dirty boiler flue passages; obstructions in the chimney or the smokepipe; air leaks between boiler sections; a smokepipe which is level, or sloping downwards instead of upwards, between the boiler and the chimney; a chimney top lower than the highest point of any building in a fifty-foot radius; a smokepipe pushed so far into the chimney as to close it up partway; a smokepipe or chimney flue too small for the boiler, or a chimney too low for the boiler. Sometimes the basement is so tight that enough air cannot enter for combustion; and of course the chimney can't pull the air out of the basement unless more is allowed to enter.


decorative top catches wind
dirt collected in offset
flues dirty, cleanout door cracked
smokepipe leaking, sagging, and pushed too far into chimney
chimney and smokepipe need cleaning

Chimney Defects. They Must be Corrected to Get Good Draft.

Some chimney troubles are next to impossible to correct; witness, for example, the plight of the man who builds a two-story house next to a twenty-story building and finds that he cannot get good draft without extending his chimney over the roof of his neighbor. The simple and fairly inexpensive way out of such a difficulty is to have a mechanical blower properly installed.

Firing Coal and Coke

To burn anthracite (particularly the small sizes) or bituminous coal efficiently, add fresh coal to the fire only after you have raked the top coals of the burning fire to one side, or to the back, of the firebox. Then fill in the hole you have made with fresh fuel. The more fuel you intend to add, the bigger you must make the hole, for after you add fuel there still should be a hot spot of glowing coals exposed in some part of the firebox. These will serve to light the burnable gases that will be driven off from the fresh fuel as its temperature is raised.

If you do not follow this procedure, you will waste much of the heat value of the coal by permitting the rich gases from the fuel to go up the chimney unburned. With soft coal and with some varieties of anthracite, this may result in excessive smoke pouring from the chimney.

Permitting the gases to go unburned as they are generated can also cause what is known as a gas puff; this occurs when unburned gases collect above the fire, mix with enough air to give a mildly explosive combination, then ignite when the top of the firebed gets red hot. If the coal is wet the hot spot mentioned above may not prevent such a puff. With mechanical blowers, if the doors are not of the self closing type, after a "puff" strong enough to blow open the doors, the gases may be forced into the building and cause carbon monoxide poisoning. This has happened in several cases in recent years.

Each time you add fuel to the fire, open the shutter on the firing door to permit air to enter the firebox and burn the gases coming from the coal. But be sure to close this door later,

because when the air is no longer needed to burn gases it will chill the fire and the boiler.

Adding fresh fuel to the fire in such a way that it covers all the burning fuel is the wrong procedure for anthracite or bituminous coal, but the correct one for coke. As has been explained, coke gives off no volatile gases on being heated; therefore there is no need to provide means of igniting such gases.

See that the ash pit is tight both around the top and at the floor. See that the draft closes tightly. With a mechanical stoker, if there is a large hole around the stoker bar, stuff something into it each time after stoking, unless it can be permanently closed.

Some Don'ts

The following *Don'ts* cover some common errors made in tending domestic furnaces and boilers:

Don't shake grates too often, and when you do shake them stop after a few live coals have fallen into the ashpit. Leave more ashes on the grates in mild weather than in cold.

Don't regulate your fire by leaving the firing door open, for this wastes large amounts of fuel. Open the check damper as much as necessary for night banking; if when wide open it does not slow down the fire enough, close the butterfly damper in the smokepipe.

Don't use ashes for banking the fire; instead, sprinkle it with small size coal.

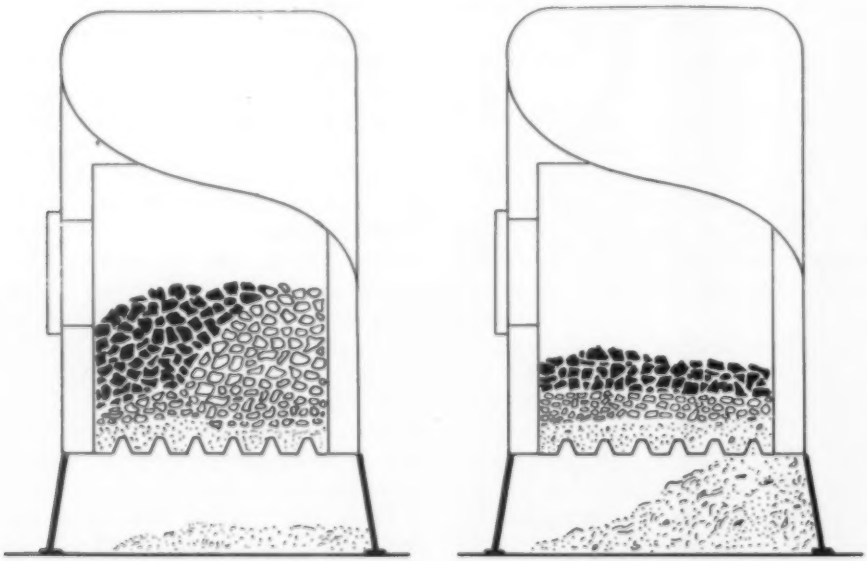
Don't poke the fire needlessly, as this causes ashes to mix with the burning coal, become melted, and form clinkers. (White ash anthracite will form fewer clinkers than others, as the melting temperature of the ash is usually above the temperature of the fire.)

Don't add such small amounts of coal to the fire that only a few handfuls of coal are kept burning. To save coal in mild weather, fill the firebox properly, then regulate the dampers so that the coal burns slowly.

Don't fail to remove ashes regularly. If they collect in the ashpit until they reach the grate level, they will choke off the air going through the grates, and cause the grates to be burned out.

Don't waste fuel by overheating your house. If necessary, install an electric thermostat and damper operating motor. If your boiler is equipped with a device which opens and closes dampers in response to changes in the pressure or the temperature of the boiler, be sure to use it.

Don't waste the heat your heating system provides. Insulate the house properly, weatherstrip windows and doors, and confine ventilation to that required to prevent odors.



How Fresh Coal Should be Placed in a Boiler or Furnace.

Buying Coal

A close, careful examination by the buyer will tell much about coal. Large pieces of slate and stone can be readily detected and the amount of fine or dust coal estimated. While there are supposed to be standard sizes of coal, some may vary considerably. If possible examination of coal should be made before it is put into the basement.

It is possible for a large number of homeowners to group together to buy their coal in quantity. In such a case, it may pay to run laboratory tests on large lots and buy the coal on a straight heat (B.t.u.) basis. Several consumer organizations are buying both coal and fuel oil in this manner and make real savings for their members. One such consumer organization reports that with the local dealers' price of stove anthracite at $13.50 it was able to sell to its members at $11.50 per ton. Another group effected a total saving of $3,000 in their purchases of coal and fuel oil last year, which meant in this case an average of about $15 per family. In addition, the fuel oil and coal were tested to make sure that they were meeting minimum standards.

Two consumer organizations in the east which purchase fuel for their members are the New Jersey Consumers Cooperative, Inc., Chatham, N. J., and the Chappaqua Consumers' Club, Pleasantville, N. Y.

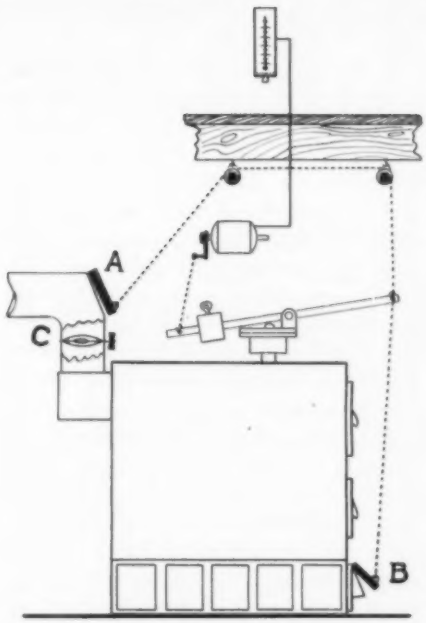
Coal prices, of course, vary considerably from one community to another, but in each locality, differences between the prices of the various grades should correspond at least roughly to those given below. The prices given are only approximate and represent the best values that could be obtained for the eastern seaboard area.

Domestic Anthracite Coal

Pea $9.50 per ton. *Best Buy* for ordinary hand firing.

No. 1 Buckwheat $7.00 per ton. *Best Buy* for magazine boilers, blower-equipped boilers, and some domestic stokers. Unsuitable for ordinary hand firing.

No. 2 Buckwheat or Rice $6.25 per ton. *Best Buy* for domestic stokers.



For best results with coal, complete controls are necessary. This boiler is controlled by an electric thermostat and a mechanical control which closes the dampers whenever the steam pressure exceeds the proper limit. Every boiler should have dampers A *(check damper) and* C *(butterfly damper), and they should always be installed in the relative positions shown; that is,* C *between* A *and the smoke outlet on the boiler. If draft is inadequate, a mechanical blower may be installed at* B.

Should give white ash when used with ash removers. Not suitable for hand firing.

Stove, Egg, and Nut sizes $11.50–$11.75 per ton. These are poor buys and should be used only by those who cannot or will not adapt their furnaces or boilers to small sizes.

Bituminous Coal

Due to the many grades of soft or bituminous coal and the fact that it is mined in many parts of the U.S., there is little standardization in either the quality of the product or the price.

Bituminous coal breaks up or slacks very rapidly and consequently one always gets a considerable amount of powdered coal no matter what size is ordered. The smaller nut size must be used in automatic stokers. For average hand firing use, a mixture such as mine run, which does not contain too large a percentage of fine coal, is best.

Fuel Oil

The large oil companies declare they sell fuel oil at certain "posted" prices, and generally the major oil companies do not sell at prices lower than these. But many independent companies, both large and small, will sell at from a quarter of a cent to a cent below "posted" prices. It may pay you to shop around. Unless the oil companies in your city have been able to do an exceptional job of price-fixing, you will be successful.

If you insist on receiving the benefit of the lowest oil prices quoted in your city, you need not feel you are inviting an oil company to give you inferior oil or to give up its legitimate profits. In most areas, "posted" prices permit ample margin for price-cutting of at least one-half cent, still leaving good profits for the seller. Indicative of this is the fact that in some cities No. 2 oil sells at 6.5 cents, while in others it sells at 5.5 cents. The retailers in both cases buy at the same price.

Three methods may be used to ascertain that the oil offered you at a low price is suitable for your burner:

1. Ask the oil company to name the source of its oil. If it can prove that the oil comes from a reliable major company and is identical with that sold by the major at a higher price, you can feel assured the oil you will get is up to par.
2. Permit the oil company to deliver a load on the condition that burner trouble occurring while the oil is being used will be taken care of by the oil company, at no charge to you. Be sure that the company has a service department for making burner repairs and adjustments.
3. If your oil burner dealer or service man does not sell fuel oil, you can ask him about the oil in question. Examination of the oil by a burner or oil specialist is an alternative procedure.

The best buy for any homeowner is the heaviest or thickest oil that the burner will atomize properly.

No. 4 oil contains more heat per gallon than the more commonly used No. 2; it is very slightly thicker than No. 2; and in most gun-type burners it burns just about as easily as the lighter grade, although readjustment of the burner may be necessary. The reason it is a good buy in domestic fuel oils, however, is that it sells for one-half cent less per gallon than No. 2 oil, affording the user of 2,500 gallons yearly a saving of at least $12.50. At present certain oil companies object to selling No. 4 oil at the lower price, claiming, among other things, that it is No. 3 oil according to a recently adopted oil company agreement, and that it costs almost as much as No. 2 oil at the refineries. Fortunately, such companies are in the minority and if you run into one you can probably secure the lower price from another company in the same city.

The Coal Miners

THEY CAME ACROSS THE HILLS, 7,000 marching men in blue overalls with red handkerchiefs knotted around their necks. Every miner carried a weapon—rifle, shotgun, or pistol. The army brought its own commissary and a band of nurses to care for the wounded.

This was not Spain in 1936, but West Virginia in 1921, where one of the many harsh chapters in the history of coal was being written in blood. Goaded by the killing of a mayor and the assassination of a police chief who had told the coal operators' imported thugs to leave the county, the miners took arms when their own men were shot down.

The army of the Kanawha coal field was finally driven back. Single shot rifles held their own against the blazing machine guns of the companies' gunmen and the militia, but the arrival of federal troops to aid the companies turned the tide. More than 50 men were killed in that battle of nearly a week, and the union was crushed in Mingo County.

There is still chaos in the coal industry, although the crackle of machine guns is not heard so frequently. For the conditions which have existed

and do exist, the individual mine owners are not entirely to blame. Too many mines have been opened, too many coal fields are owned by large industrial users of coal, who threaten to open their own new mines if they cannot continue to buy for less than cost from the present operators.

The domestic consumer and the miner get the short end of the coal deal. The householder pays a high price so that the industrial consumer can get his much larger supply for cost-minus. Even so, the profits made from domestic sales often do not compensate for the bargain rates to industry. The result is that many coal operators—but not all of them—are unable to show profits. "This turns the coal industry into a gamble," comments Mary Van Kleeck of the Russell Sage Foundation.

Miss Van Kleeck declares: "The industry has continuously failed to stabilize employment, production or markets. It has failed to conserve a non-restorable natural resource. It is utterly unable to cope with competing fuels."

So long as the industry continues in its present chaos, the coal miner has little hope of winning anything that resembles a decent standard of living in his struggle against two obstacles: lack of work, and low pay. In 1926, a peak year, bituminous miners and loaders averaged 19 days' work a month with a weekly pay average of $28.43, according to the Bureau of Labor Statistics. From that year, work and wages shrank until by 1933 the monthly average was 14.2 days and the weekly envelope contained an average of $10.42. In 1936, average weekly pay was up to $20.65 for soft coal miners and $16.72 for hard coal miners.

Weekly earnings, however, give an exaggerated idea of the miner's actual income. All kinds of deductions are made from earnings. For the explosives he uses, the worker may be assessed up to $15 a month. Other charges, varying from mine to mine, are for the shotfireman, company insurance, company doctor, company blacksmith, and the burial fund.

About half of the bituminous miners live in company houses. Almost invariably these are cheaply built, ugly and unsanitary, ranking well below the standards of the average cold-water flat in New York City. A single faucet in the kitchen is the common limit to plumbing facilities, although thousands of these dwellings have no faucets at all. Shower baths are luxuries reserved for foremen and superintendents.

Leases for company houses differ markedly from those familiar to most members of Consumers Union. Quite frequently it is stipulated that the family may be dispossessed if anyone whom the company considers undesirable is admitted to the house—for example, a union organizer.

Mine Accidents

In American coal mines in 1933, the death rate was about three times higher than the rates for Great Britain, Belgium and Germany. Accidents killed 1,226 American coal miners in 1934 and injured 68,008. Many lives are lost by explosions and fires, which could be prevented by rock-dusting, a process that is somewhat expensive. Only 25 per cent of all underground bituminous miners are protected by this method.

Men who escape sudden death or maiming by rock falls, explosions, fire, and failure of machinery, face the alternative of a slower death from respiratory diseases. Silica dust takes a certain toll; it is proverbial that miners die young. The Public Health Service reported that lung diseases caused 57.6 per cent, proportionately, of the deaths among Wilkes-Barre miners, compared with 37.2 per cent in the non-miner population.

The miners have not gambled their health and lives for niggardly pay without protests. Unionism has had a strong foothold in their ranks for many years. Today the United Mine Workers of America, with approximately 540,000 members under the leadership of John L. Lewis, is the largest trade union of the nation. Organized on industrial lines, the union includes about 95 per cent of all the coal mine workers, above and below ground.

The need for a strong union can hardly be doubted. Five of the country's greatest corporations are in the coal industry, according to *Mining Notes*, publication of Labor Research Association. Of these, three are listed as part of the Morgan domain—the Glen Alden Coal Company, the Lehigh Coal and Navigation Company, and the Philadelphia and Reading Coal and Iron Company, with assets totaling $389,000,000. Part of the Mellon empire is the Pittsburgh Coal Company, a $160,000,000 concern; and Rockefeller is represented by the Consolidation Coal Company. Illustrative of the extent to which the coal-consuming industries have entered into the operation of captive mines is the fact that United States Steel Corporation alone employs more than 25,000 miners in its 81 mines.

Colorado, where Rockefeller played midwife to the company union plan after the Ludlow massacre 22 years ago, has obtained a brighter name through the remarkable work of one mine operator, Miss Josephine Roche of the Rocky Mountain Fuel Company. She encouraged her employees to join a bona fide union, and quickly won the hostility of other operators by paying higher wages.

A picturesque sequel to the depression-closing of hundreds of tipples in the Pennsylvania anthracite region has been the growth of bootleg mining. With their one trade denied them and no other jobs available, an estimated 20,000 miners are now earning from $2 to $4 a day working pits dug by themselves on the mine operators' property, where millions of dollars' worth of modern machinery lies idle.

A fleet of some 10,000 trucks carries the hard coal to nearby towns and to the Philadelphia and New York areas, where it is peddled to householders at $2 to $3 below the prevailing retail price for a ton. The bootleg miners are well organized in their own union, with headquarters at Shamokin, Pa. The coal companies have bitterly protested this invasion of their property, but sympathetic citizenry, and even police officers, have refused to tolerate evictions.

What of the future? It is patent that the coal industry is unable to save itself. The only solution seems to be that suggested by Miss Van Kleeck: nationalization of this and related industries, with the best of scientific management to shorten the hours of labor and to regulate operation of existing mines and the opening of new ones when needed.

BRANDIES, GINS, RUMS, CORDIALS

Twenty-four members of Consumers Union have written that they want Consumers Union to report on liquors. Fifteen members have voiced disapproval. Some of the letters on both sides will be printed in the next issue. Meanwhile the present series of three reports on wines and liquors will be completed; but a more general survey of the wishes of members as to reports on all types of products will be made to guide future policy.

BRANDY IS THE PRODUCT OBTAINED BY the distillation of the fermented juice of fruits. The term "brandy" used without the name of some other fruit (as, "apple brandy") means grape brandy.

Cognac is simply a grape brandy distilled in the Cognac district of France from grapes grown in that section; Armagnac is a grape brandy from the Armagnac section of France. While many authorities rate the brandies of Cognac as the finest in France, if not in the world, the average Armagnac on the dealer's shelves is likely to surpass the average Cognac in quality. This is due primarily to the greater commercialization of the industry in Cognac than in Armagnac.

Spanish brandies, somewhat heavier than French brandies, are known for their distinctive flavor.

The American brandies now on the market are all somewhat immature. They cannot be compared with the older imported brandies, but must be judged by themselves as young brandies in a lower-price class.

Of the fruit brandies, apple brandy, or applejack, is the most popular here, being almost exclusively an American drink. Unfortunately, the commercial product on the market today does not approach in quality that obtainable from the private stocks of many farmers. This brandy is one of the quickest maturing of all liquors, reaching its prime, when properly made, in from two to four years. The absence of quality products is, therefore, due solely to lack of skill and foresight on the part of the producer, and not to lack of time for proper aging.

Rum

Rum is obtained by distillation of the fermented juice of the sugar cane or of a cane product such as molasses.

West Indies and New England rums are heavy, full-bodied liqueurs, possessing a more penetrating flavor than any other distilled liquor. For this reason they find favor for kitchen use.

The rums from British possessions (Jamaica, Demerera, Barbados, etc.), which are aged either on the islands or at the London Dock warehouses in England, are fuller-bodied and "rounder" than the "light" French (Martinique) rums. It is only fair to warn the reader, however, that "light" rums possess far heavier taste characteristics than do even heavy American whiskies.

Virgin Island rums do not as yet compare in quality with those from Jamaica, Haiti or Martinique. Indeed, no palatable Virgin Island rum has yet been encountered.

Cuban and certain Cuban-type rums are much lighter in body than other rums. They find their principal use in cocktails.

Gin

The ideal British or American gin is an extremely pure grade of grain alcohol to which has been imparted a pleasing juniper-base taste and odor. The flavoring ingredients are best added by a distilling process, an operation requiring considerable skill if the resulting product is to be palatable.

Good commercial grades of American grain alcohol are somewhat purer and show less taste and odor characteristics than do equivalent grades of British spirits. Hence the American-made brand of an English gin, as Gordon's, even when made by the same company, will differ somewhat from the original British product.

"Dry" gins differ from "Old Tom" gins in that the latter contain small amounts of sugar. "Sloe gins" are not gins at all, but are properly classed as cordials.

Many producers put out under an unadvertised brand name, a gin identical with the advertised brand, at an appreciably lower price. These gins can usually be recognized by the name of the distiller on the label.

The consumer can readily compare the quality of two gins simply by adding an equal amount of hot water to a small amount of each gin and tasting and smelling each in turn. The one that smells less sharp and has a flavor more acceptable to one's palate is the preferable gin.

Cordials

Cordials are highly sweetened drinks made usually from an alcoholic base (alcohol, rum, or brandy) and flavored with fruits, herbs, flowers, etc.

In addition to certain well defined types, there are a few specialty cordials which are the product of a given house, are sold under registered names for specific uses, and generally have not been successfully imitated. Cointreau, Benedictine, Chartreuse (yellow and green) and Grand Marnier are the best known of these. These cannot, of course, be rated comparatively.

In the manufacture of the "type" cordials, many combinations of flavoring materials are used, but the principal materials which impart the characteristic flavor are: Crème de Menthe, peppermint; Crème de Cacao, cacao bean; Anisette, anise seed; Kümmel, caraway seed; Triple Sec, orange peel.

The fruit cordials (such as cherry, apricot, and peach) are derived from the respective fruits.

Note: The ages listed here are those stated on the labels, but their listing is not to be taken as an endorsement of their authenticity.

IMPORTED BRANDIES

Best Buys

Marquis de Cussade 1900 Armagnac (Imported by Park Benziger & Co., NYC). $4.49 per fifth. 84 proof. Representative of the better Armagnac; smooth, and with extremely good development of the brandy characteristics; slightly sweet.

Domecq's Fundador Spanish Brandy (Pedro Domecq. Imported by Comex Trading Co., NYC). $3.94 per fifth. 86 proof. 25 years old. This offers the fullness in body of the better grades, with good development of the brandy characteristics. While not as smooth and not as sweet as some French brandies, it is decidedly not sharp.

Courvoisier V. O. Liqueur Cognac (Imported by F. C. G. Importers, Inc., NYC). $3.99 per fifth. 84 proof. 20 years old. Vastly superior to this shipper's "*Three Star*" grade selling for $3.58.

Also Acceptable

(*In estimated order of merit*)

Martell's Cordon Bleu (Martell & Co. Imported by Park & Tilford Import Corp., NYC). $6.99 per fifth. 76 proof. 35 years old. An extremely fine Cognac, showing all the *finesse* one expects in a well made, matured brandy.

Hennessey's 40 Years Old Cognac (James Hennessey & Co. Imported by Schieffelin & Co., NYC). $8.74 per fifth. 80 proof. A well made, full-bodied brandy, fully matured.

Bisquit Dubouche & Co.'s "Three Star" (Imported by G. H. Mumm Champagne & Associates, Inc., NYC). $3.29 per fifth. 84 proof. A smooth and pleasant brandy, marketed without any exaggerated claims.

Not Acceptable

Hennessey's Three Star (James Hennessey & Co. Imported by Schieffelin & Co., NYC). $3.99 per fifth. 84 proof. At times distinctly sharp and somewhat lacking in evidence of maturity.

Martell's Three Star (J. and F. Martell. Imported by Park and Tilford Import Corp., NYC). $3.99 per fifth. 84 proof. The comments on *Hennessey's Three Star* are equally applicable here.

APPLE BRANDIES

Best Buys

Old Mill Brand Apple Brandy (Connecticut Distilleries, Inc., Westport, Conn.). $1.14 per pint. 90 proof. While lacking the full body of the old-style brandy, it shows good smoothness, a light but delicately pleasant apple odor and flavor and, above all, good uniformity of quality.

Bramoor Applejack Brandy (H. B. Morgan Company, Amenia, N. Y.). $1.09 per pint. 90 proof. Heavier than *Old Mill*, and likely to be exceptionally pleasant. Its uniformity, however, is not all it might be, probably due to poor selection of the cooperage in which it is aged.

Also Acceptable

Hildick Old Fashioned Applejack Brandy (Lyons, N. Y. distillation) (Distilled by Distilled Liquor Corporation, NYC). "Black Label"; $.98 per pint; 90 proof. "White Label": $1.39 per pint; 100 proof. This concern operates two distilleries, one at Lyons, N. Y., and the second at Flemington. N. J. The product from Lyons shows fair development of the brandy characteristics and fair uniformity of quality. The sole difference between "White Label" and "Black Label" is that of proof, and the price difference is excessive.

Not Acceptable

Hildick Old Fashioned Applejack Brandy (Flemington, N. J. distillation) (Distilled by Distilled Liquor Corporation, NYC). "Black Label": $.98 per pint; 90 proof. "White Label": $1.39 per pint; 100 proof. The product from this plant shows poor uniformity, with an unbalance of the brandy characteristics. The higher proof of the "White Label" grade tends to accentuate the shortcomings of the product.

Three Star Laird's Apple Jack Brandy (Laird & Co., Scobeyville, N. J.). $1.24 per pint. 90 proof. The shortcomings of the New Jersey *Hildick* are noticeable here and are generally more pronounced.

WEST INDIES AND NEW ENGLAND RUMS

Best Buys

Charley's Jamaica Rum—Finest Old Jamaica (Distilled and bottled in Jamaica by Edwin Charley, Kingston. Imported by Park Benziger & Co., Inc., NYC). $3.44 per fifth. 90 proof. 8 years old. A fine rum, having a nicely developed medium rum body and good smoothness; does not show a pronounced molasses flavor.

Rhum des Plantations Saint James —Exports (Ernest Lambert & Cie., France. Imported by Browne Vintners Co., Inc., NYC). $3.49 per fifth. 94 proof. Age not given. One of the better French rums; smooth with light and pleasant rum characteristics. Like other Martinique rums, it lacks the heaviness of the Jamaica.

Punch and Judy Rum (V. Parravicino, Barbados, B.W.I. Imported by R. C. Williams & Co., NYC). $1.99 per fifth. 90 proof. Age not given. A reasonably priced product of considerably better than fair quality.

Also Acceptable

(*In estimated order of merit*)

Charley's Jamaica Rum—Red Label (Distilled and bottled in Jamaica by Edwin Charley, Kingston. Imported by Park Benziger & Co., Inc., NYC). $3.19 per fifth. 90 proof. 5 years old. A fine rum; smooth; nicely developed medium rum body; does not have pronounced molasses flavor.

Charley's Jamaica Rum—Royal Reserve (Distilled and bottled in Jamaica by Edwin Charley, Kingston. Imported by Park Benziger & Co., Inc., NYC). $4.14 per fifth. 86 proof. 15 years old. A fine, smooth rum. More nearly approaches a liqueur brandy than does any other rum.

Red Heart Rum (Bottled by Port of London Authority. Shipped only by Henry White & Co., London. Imported by Alex. D. Shaw & Co., NYC). $3.14 per fifth. 90 proof. No age statement given. An extremely heavy Jamaica "London Dock" rum, and one of the finest for use in cookery, as well as a smooth and pleasant beverage. The absence of an age statement is an honest omission, since "London Dock" rums are blended, and any age claim would be fraudulent.

Lemon Hart Jamaica Rum (Bottled and shipped by Lemon Hart & Son, London. Imported by Julius Wile Sons & Co., NYC). $3.14 per fifth. 90 proof. Age not given. Like *Red Heart*, it is a heavy Jamaica rum, aged in London, of good quality.

Rhum Sarthe (Distilled at the Sarthe Distillery, owned by the Haytian American Sugar Co., Port au Prince. Imported by Hasco Trading Co., NYC). $2.89 per fifth. 90 proof. 6 years old. Shows good smoothness and fair development of rum characteristics.

Burke's Finest Old Jamaica Rum (Edward & John Burke, Ltd., Liverpool. Imported by E. & J. Burke, Ltd., Long Island City, N.Y.). $3.29 per fifth. 90 proof. 6 years old. A heavy Jamaica rum, with fair development of the rum characteristics.

Not Acceptable

Finest Old Jamaica Rum (Bottled by J. Wray & Nephew, Ltd., Kingston. Imported by E. Melhado & Co., NYC). Two grades are marketed: "2 Dagger": $3.49 per fifth; 97 proof; 6 years old. "3 Dagger": $3.69 per fifth; 97 proof; no age statement. Lacks the smoothness and development of other Jamaica rums in this price class.

Old St. Croix Brand Rum (Distilled and bottled by A. H. Riesl at St. Thomas, V.I. Imported by Heaton Wine and Spirits Corp., NYC). $1.79 per fifth. 93 proof. Age not stated. The immaturity of the product is most marked.

Pilgrim Straight New England Rum (Distilled and bottled by Felton & Son, Boston. Distributed by Cluff & Pickering, Ltd., NYC). $2.34 per quart. 100 proof. The immaturity is most marked.

CUBAN AND CUBAN-TYPE RUMS

Best Buy

Rum Carioca Cuban Type Rum (Bottled for American Spirits, Inc., NYC). Distilled by American Distilling Co., Gretna, La.). $1.89 per fifth. 86 proof. No age stated. A domestic rum attractively priced. Smooth, palatable, and with fair development of the rum characteristics. At least equal to some imported rums with exaggerated age claims.

Also Acceptable

Ron Methusalem Extra Viejo (Alvarez Camp y Cia., Santiago, Cuba. Imported by Julius Wile Sons & Co., NYC). $3.29 per three-quarter quart. 87 proof. 15 years old. A well made rum that reminds one of a quality brandy; smooth, pleasant, and with a fully matured rum flavor. The age claim is not endorsed, although this rum appears to be older than most rums.

Not Acceptable

Ron Rico Puerto Rico Rum (Puerto Rico Distilling Co., Puerto Rico. Imported by McKesson & Robbins, Inc., NYC). Samples of this product were found to contain free sulfuric acid and manganese, the contamination resulting, probably, from a patented quick-aging process. This rum is hazardous to health and should not be used.

Ron Bacardi (Superior de Bacardi y Cia., Santiago, Cuba. Imported by Schenley Wine & Spirit Import Corp., NYC). $3.24 per 24½ ounces, white; $3.54 per 24½ ounces, gold. 89 proof. "Aged in wood over 4 years." Wide variation between samples purchased in Cuba and those purchased in the United States indicates probable deception as to origin of product sold here.

GINS

Best Buys

Gilbey's Distilled London Dry Gin (Distilled by W. & A. Gilbey, Ltd., Cincinnati, Ohio. Distributed by Penn-Maryland Distributing Co., NYC). $1.39 per fifth.

Anchor Dry Gin (Distilled by John De Kuyper & Son, Inc., Jersey City, N. J. Distributed by Alex. D. Shaw & Co., Inc., NYC). $1.39 per fifth.

Milshire Distilled Dry Gin (Distilled and bottled by G. F. Heublein & Bros., Hartford, Conn. Distributed by Heublein Sales Co., NYC). $1.39 per fifth.

Also Acceptable

Gold Feathers Distilled Dry Gin (Distilled and bottled by Oldetyme Distillers, Inc., Newark, N. J.). $1.29 per fifth.

Gordon's Distilled London Dry Gin (Distilled and bottled by The Distillers Co., Ltd., Linden, N. J., for Gordon's Dry Gin Co., Ltd., Linden). $1.59 per fifth.

Not Acceptable

The following are not acceptable either because of consistently poor quality or variations in quality in different samples:

Fleischmann's Distilled Dry Gin (Distilled by Fleischmann Distilling Co., Peekskill, N. Y.). $1.49 per fifth.

Downing Street Finest Distilled Dry Gin (Distilled and bottled by Old Collins Co., Inc., NYC). $1.29 per fifth.

Tudor Castle Old Fashioned English Style Gin (Distilled and bottled by Ostrucon Distilling Co., NYC). $1.19 per fifth.

CORDIALS

Best Buys

John De Kuyper & Son, Inc., Jersey City, N. J. (Distributed by Alex. D. Shaw & Co., NYC). $2.19 to $2.39 per fifth. One of the very few domestic products that will stand critical comparison with the imported products.

Ervin Lucas Bols, Amsterdam, Holland (Imported by G. H. Mumm Champagne & Associates, Inc., NYC). $3.86 to $4.44 per fifth.

Also Acceptable

(In estimated order of merit)

Marie Brizard & Roger, Bordeaux (Imported by Park & Tilford Import Corp., NYC). $3.89 per fifth. Typical of the finer French cordials, which in general possess slightly less *finesse* than those from Holland. Their Anisette is the world's standard, and their Crème de Cacao is worthy of special mention.

Cusinier's (Gde Distillerie E. Cusinier Fils Aine & Cie.), France (Imported by W. A. Taylor & Co., NYC). $3.74 to $4.49 per fifth. Another representative line of French cordials; their *Freezomints* (Crème de Menthe) in both white and green, is the world's standard.

Nuyens'—Made by British American Distilling Co., under Supervision Nuyens & Cie., Bordeaux ("Bottled for Sole Agents, B. B. Dorf & Co., New York"). $2.14 to $2.34 per fifth. The label and literature would lead one to expect the products closely to resemble the imported Nuyens line. Examination shows them to lack considerable of the *finesse* of the original French product.

Not Acceptable

Arrow Distilleries, Inc., Detroit. $1.99 to $2.24 per fifth. These products are somewhat over-sweet and heavy to the palate, and in some of the line, an alcoholic taste is perceptible despite the tendency towards over-flavoring.

Original Julius Marcus Laboratories, Inc., Jersey City, N. J. $1.99 to $2.34 per fifth. The shortcomings of the Arrow line are repeated here, somewhat more pronouncedly.

Caves de H. Mouquin (Mouquin, Inc., Brooklyn, N. Y.). $1.89 to $2.19 per fifth. Entirely lacking in *finesse;* some criticism of the quality of the alcoholic raw materials could well be made.

RED STAR—$1.14; MILSHIRE—$1.49.
BUT THE DISTILLER AND THE PRODUCT ARE THE SAME.

Canned PEAS *and* APRICOTS

Grading of canned peas and apricots shows impossibility of wise purchasing on basis of price, brand name, or statements on label.

CANNED PEAS AND CANNED APRICOTS sold in the South or Middle West of the United States are not as good as those sold in the eastern states or on the Pacific Coast. This statement is based on tests of 31 different brands of peas and 16 different brands of apricots. The tests were made for Consumers Union by graders in the United States Bureau of Agricultural Economics.

It was found that Southerners pay as much or more for consistently low grade products than Easterners do for good quality. The lowest level of prices along with good quality is found in the West. The cans were purchased in retail stores in various sections of the country.

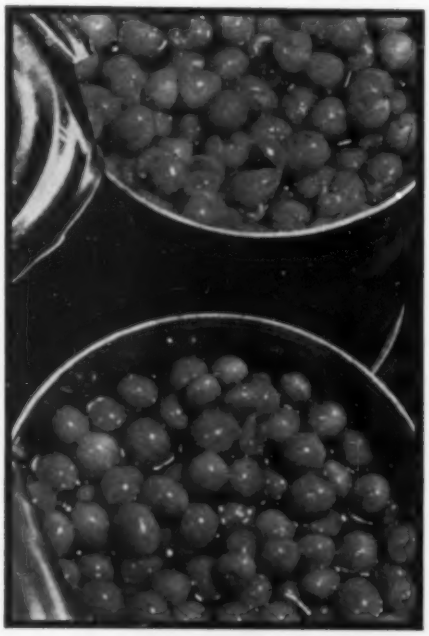
This report, based on the graders' findings, is the first of a series of reports on various canned fruits and vegetables which will be presented from time to time in these pages.

Examination of the listings will show that price is no guide to quality, and that the same brand name may represent high quality in one part of the country and poor quality in another; that some canned peas and apricots of excellent quality are sold for low prices, while others of poor quality are sold at high prices.

Labels Lie

The statements made on the label of a can or in advertising are as poor a guide to intelligent purchasing as is price. The *A & P* peas sold in the South and labeled "Fancy" were so tough and lacking in flavor and uniformity that they were listed among the poorest of those tested.

Compulsory government grading of all canned products, which would require the information given in this report to be placed right on the label of every can sold, is the only means by which buyers generally can get the quality they want and are willing to pay for.



Above—SUBSTANDARD PEAS—OLD, BROKEN, TOUGH, AND SPROUTING.

Below—GRADE A—YOUNG, SWEET, AND TENDER.

It must be emphasized that the *grade* of a food is not based on nutritive value but mainly on the appearance of the product.

Peas, in order to reach the rigid government standards for Grade A, must conform to the following requirements: They must be prepared from fresh, young, very tender peas. The liquid surrounding them must be clear. In addition, the peas must be whole and uniform in color, and must have the flavor of fresh peas.

With apricots, the grader must take into consideration not only color, uniformity, symmetry, and absence of defects in the fruit, but also the sugar content of the syrup, the net drained weight, and the number of pieces in the can.

Point values are assigned to each of the qualities judged. The highest possible score, if the product is perfect in all the characteristics noted, is 100. Scores between 90 and 100 are considered Grade A; 75 to 90, Grade B; and 60 to 75, Grade C. The designation "Substandard" is reserved for canned goods having a score below 60.

It is believed that the ratings here given represent average values for the areas in which the samples were purchased. While there is some variation in quality from can to can of the same brand, in general the variation is small for samples purchased in the same area.

The Ratings

It will be noted that the products are listed by groups, with Grades A and B+ rated as Good Quality; B and B—, Medium Quality; C, Poor Quality, and SS, Substandard.

The arrangement of the listing, within each group, is in the order of cost, per pound, of the samples tested. Since prices vary from store to store, and the cost per pound is different for different sized cans, the order of listing is only roughly indicative of how good a buy a brand will be in a particular store.

The heading, GRADE, gives the exact government grade in the case of peas; for apricots, it refers only to the government *score* (based on flavor, texture, appearance, etc.), and does not take into account the sugar content of the syrup and the number of pieces in the can, both of which modify the grade in official government standards.

GRADE	BRAND NAME; VARIETY	PACKER OR DISTRIBUTOR	SIZE OF PEAS	LABELED WEIGHT	PRICE PER CAN	COST PER LB.
Good Quality		**PEAS—EAST**				
B+	*Minnesota Valley* Garden	Minn. Valley	Large	1 lb., 1 oz.	13c	12.2c
B+	*Princess Royal* Sweet Wrinkled	Snider Packing	Med.	1 lb., 4 oz.	16c	12.8c
B+	*Royal Scarlet* Telephone	R. C. Williams	Large	1 lb., 4 oz.	17c	13.6c
B+	*Libby's* Sweet	Libby, McNeill	Med.	1 lb., 4 oz.	17-18c	*14.0c
A	*Del Monte* Early Garden Sugar	Calif. Packing	Mixed	1 lb., 4 oz.	17-19c	*14.4c
B+	*White Rose* Garden Sweet	Seeman Bros.	Large	1 lb., 4 oz.	17-19c	*14.4c
B+	*S & W* Telephone Sugar	Sussman, Wormser	Small	1 lb., 4 oz.	18c	14.4c
A	*Lily of the Valley* Tender Sweet	Snider Packing	Large	1 lb.	15c	15.0c
B+	*Macy's Lily White* Fancy Small June	R. H. Macy	Med.	1 lb., 3 oz.	18c	15.2c
B+	*Royal Scarlet* Early June	R. C. Williams	Med.	1 lb., 4 oz.	20c	16.0c
A	*Green Giant* Tender	Minn. Valley	Large	1 lb., 1 oz.	18-19c	*17.4c
A	*Grand Union* Extra Sifted	Grand Union	Small	1 lb., 4 oz.	23c	18.4c
A	*Snider*	Snider Packing	Small	1 lb.	18-19c	*18.5c
A	*Ecco* Special	Economy Grocery	Small	10.5 oz.	13c	19.8c
A	*S & W* Small Sugar	Sussman, Wormser	Small	1 lb., 4 oz.	25c	20.0c
A	*A & P* Fancy Early June	A & P	Small	11 oz.	15c	21.8c
Medium Quality						
B	*Iona* Sweet	A & P	Mixed	1 lb., 4 oz.	13c	10.4c
B	*Reliable* Sweet	A & P	Large	1 lb., 4 oz.	18c	14.4c
B	*Royal Scarlet* Garden	R. C. Williams	Mixed	1 lb., 4 oz.	15-23c	*15.2c
Poor Quality						
C	*Phillips'* Early June	Phillips Packing	Med.	1 lb., 4 oz.	10c	8c
C	*Phillips'* Early June	J. Richard Phillips, Jr.	Large	1 lb., 4 oz.	10c	8c
C	*Webster's* Early June	G. L. Webster	Large	1 lb., 4 oz.	10c	8c
Good Quality		**PEAS—WEST**				
A	*Libby's* Garden Sweet	Libby, McNeill	Small	1 lb., 4 oz.	15c	12.0c
B+	*Del Monte* Early Garden Sugar	Calif. Packing	Med.	1 lb., 4 oz.	15-17c	12.8c
B+	*S & W* Telephone Sugar	Sussman, Wormser	Small	1 lb., 4 oz.	18c	14.4c
B+	*Libby's* Fancy Sugar	Libby, McNeill	Med.	1 lb., 4 oz.	19c	15.2c
Medium Quality						
B	*Mission* Sugar	Calif. Packing	Large	1 lb., 4 oz.	13c	10.4c
B	*Blue & White* Sweet	Red & White	Med.	1 lb., 4 oz.	15c	12.0c
B	*Monarch* Small Sifted Early June	Reid, Murdoch	Small	1 lb., 4 oz.	15c	12.0c
B	*IGA* Sugar	Independent Grocers	Med.	1 lb., 4 oz.	15c	12.0c
B	*Stokely's* Honey Pod Sugar	Stokely Bros.	Small	1 lb., 4 oz.	15c	12.0c
B	*Red & White* Sweet	Red & White	Med.	1 lb., 4 oz.	20c	16.0c
Good Quality		**PEAS—MIDDLE WEST**				
A	*Stokely's* Party	Stokely Bros.	Small	1 lb., 4 oz.	21c	16.8c
Medium Quality						
B—	*Big M* Early June	H. A. Marr	Large	1 lb., 4 oz.	12-14c	*10.4c
B—	*Del Monte* Early Garden Sugar	Calif. Packing	Med.	1 lb., 4 oz.	16c	12.8c
B	*IGA* Sugar	Independent Grocers	Med.	1 lb., 4 oz.	16c	12.8c
B—	*Brimfull* Sifted Early June	H. A. Marr	Mixed	11 oz.	9c	13.1c
B	*Monarch* Telephone	Reid, Murdoch	Large	1 lb., 4 oz.	17c	13.6c
B	*Kuner's* Tender Garden	The Kuner Pickle Co.,	Mixed	1 lb.	11-17c	*14.3c
B—	*Marco* Tiny	H. A. Marr	Small	1 lb., 4 oz.	19c	15.2c
B	*Red & White* Early June	Red & White	Med.	1 lb., 4 oz.	17-23c	*16.0c
B	*Richelieu* Early June	Sprague, Warner	Med.	1 lb., 4 oz.	20-25c	*18.0c
B	*Green Giant* Tender	Minn. Valley	Mixed	1 lb., 1 oz.	20c	18.8c
Poor Quality						
C	*Solitaire* Early June	Morey Mercantile	Med.	1 lb., 4 oz.	17-18c	*14c
SS	*Iona* Early June	A & P	Med.	1 lb., 4 oz.	10-12c	*8.8c

*Average

GRADE	BRAND NAME; STYLE	PACKER OR DISTRIBUTOR	SIZE OF PEAS	LABELED WEIGHT	PRICE OF CAN	COST PER LB.
		PEAS—SOUTH				
Good Quality						
B+	*Stokely's* Honey Pod Sugar	Stokely Bros.	Med.	1 lb., 4 oz.	18c	14.4c
Medium Quality						
B	*Reliable* Sweet	A & P	Med.	1 lb., 4 oz.	18c	14.4c
B—	*Del Monte* De Luxe Sugar	Calif. Packing	Large	1 lb., 4 oz.	18c	14.4c
Poor Quality						
C	*A & P* Early June	A & P	Small	1 lb., 4 oz.	23c	18.4c
SS	*Phillips'* Early June	Phillips Packing	Med.	10 oz.	8c	12.8c
SS	*Green Giant* Tender	Minn. Valley	Large	1 lb., 4 oz.	19c	15.2c
		APRICOTS—EAST				
Good Quality			SUGAR CONTENT			COST PER LB. DRAINED WEIGHT
B+	*Iona* (Halved)	A & P	Subs.	1 lb., 13 oz.	15c	13.1c
B+	*White Rose* (Whole Peeled)	Seeman Bros.	Med.	1 lb., 14 oz.	25c	19.1c
A	*Del Monte* (Halved)	Calif. Packing	High	1 lb., 14 oz.	23c	19.4c
B+	*Exquisite* (Halved)	Santa Cruz Packing	High	1 lb.	13c	*20.6c
B+	*Premier* (Whole Peeled)	F. H. Leggett	Med.	1 lb.	15c	20.8c
B+	*White Rose* (Halved)	Seeman Bros.	Med.	1 lb.	15c	21.3c
A	*Macy's Lily White* (Halved)	R. H. Macy	High	1 lb., 14 oz.	27c	*23.6c
B+	*Royal Scarlet* (Whole Peeled)	R. C. Williams	Med.	1 lb.	15-19c	*24.6c
A	*S & W* (Whole Peeled)	Sussman, Wormser	High	1 lb., 14 oz.	29c	*26.3c
B+	*Grand Union* (Halved)	Grand Union	Med.	8 oz.	10c	29.1c
Medium Quality						
B	*Freshpak* (Halved)	Grand Union	Low	1 lb., 14 oz.	19c	15.2c
B	*Royal Scarlet* (Halved)	R. C. Williams	Med.	1 lb., 14 oz.	19c	15.8c
B	*Rose-Dale* (Halved)	Libby, McNeill	Very low	1 lb., 13 oz.	19c	16.1c
B	*Premier* (Halved)	F. H. Leggett	Med.	1 lb.	14-15c	*20.6c
		APRICOTS—WEST				
Good Quality						
A	*Del Monte* (Halved)	Calif. Packing	Med.	1 lb., 14 oz.	25c	20.8c
A	*S & W* (Whole Peeled)	Sussman, Wormser	High	1 lb., 14 oz.	25-29c	*23.0c
Medium Quality						
B	*Blue & White* (Halved)	Red & White	Med.	1 lb., 13 oz.	18c	15.2c
B	*Libby's* (Halved)	Libby, McNeill	Med.	1 lb., 14 oz.	17-19c	*15.6c
B	*Red & White* (Halved)	Red & White	Med.	1 lb., 13 oz.	20c	16.8c
		APRICOTS—MIDDLE WEST				
Good Quality						
B+	*IGA* (Halves)	Independent Grocers	Med.	1 lb.	15c	*19.6c
B+	*Libby's* (Halves)	Libby, McNeill	High	1 lb., 14 oz.	25c	20.0c
B+	*Blue & White* (Halves)	Red & White	Low	1 lb., 13 oz.	20-25c	*20.6c
B+	*Red & White* (Halves)	Red & White	Med.	1 lb., 13 oz.	27c	*23.4c
A	*Richelieu* (Halves)	Sprague, Warner	Very High	1 lb., 14 oz.	33-35c	*28.0c
Medium Quality						
B	*Iona* (Halves)	A & P	Low	1 lb., 13 oz.	17.5c	*15.8c
B	*Brimfull* (Halves)	H. A. Marr	Low	1 lb., 14 oz.	18-19c	*16.4c
Poor Quality						
C	*Rose-Dale* (Halves)	Libby, McNeill	Very low	1 lb., 13 oz.	17-21c	*15.6c
		APRICOTS—SOUTH				
Good Quality						
B+	*Del Monte* Peeled (Halves)	Calif. Packing	Med.	1 lb., 4 oz.	23c	25.8c
Medium Quality						
B	*Premier* (Halves)	F. H. Leggett	High	8 oz.	10c	31.7c
Poor Quality						
SS	*Libby's* (Halves)	Libby, McNeill	Med.	1 lb., 4 oz.	23c	33.4c

*Average